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A  
DISSERTATION  
ON THE  
INFLUENCE OF A CHANGE OF CLIMATE  
IN  
CURING DISEASES.



*Thos. Wells*

*1820*

A

# DISSERTATION

ON THE

**Influence of a Change of Climate in Curing  
Diseases;**

**BY PROFESSOR GREGORY,  
OF EDINBURGH.**

Translated from the original Latin, and enlarged with occasional Notes:

**BY WILLIAM P. C. BARTON, M. D.**

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“Pessimum ægro est cœlum quod ægrum fecit; adeo ut in id quoque genus,  
quod natura pejus est, in hoc statu, salubris mutatio sit.”

CELSUS DE RE MEDICA.

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**PUBLISHED BY THOMAS DOBSON,**

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**1815.**

District of Pennsylvania, to wit:

\*\*\*\*\* BE IT REMEMBERED, That on the second day of May,  
\* Seal. \* in the thirty-ninth year of the independence of the United  
\* States of America, A. D. 1815, Thomas Dobson, of the  
said district, hath deposited in this office the title of a book, the right  
whereof he claims as proprietor, in the words following, to wit:

“ A Dissertation on the Influence of a Change of Climate in Cur-  
ing Diseases; by Professor Gregory, of Edinburgh. Translated  
from the original Latin, and enlarged with occasional Notes:  
By William P. C. Barton, M. D.

“ Pessimum ægro est cælum quod ægrum fecit; adeo ut in id quo-  
que genus, quod natura pejus est, in hoc statu, salubris mutatio  
sit.”—*Celsus de Re Medica.*”

In conformity to the act of the congress of the United States, inti-  
tuled, “ An act for the encouragement of learning, by securing the  
copies of maps, charts, and books, to the authors and proprietors of  
such copies, during the times therein mentioned.”—And also to the  
act, entitled, “ An act supplementary to an act, entitled, ‘ An act for  
the encouragement of learning, by securing the copies of maps, charts,  
and books, to the authors and proprietors of such copies during the  
times therein mentioned,’ and extending the benefits thereof to the  
arts of designing, engraving, and etching historical and other prints.”

D. CALDWELL,  
Clerk of the District of Pennsylvania.

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CH 30N45 MMT

TO  
**NATHANIEL CHAPMAN, M. D.**  
PROFESSOR OF MATERIA MEDICA IN THE UNIVERSITY OF  
PENNSYLVANIA: WHOSE TALENTS AND URBANITY  
HAVE ELEVATED HIM TO THE HIGHEST  
EMINENCE IN HIS PROFESSION;  
**THIS LITTLE WORK,**  
IN GRATEFUL ACKNOWLEDGMENT OF MANY ACTS OF  
FRIENDLINESS, AND IN EVIDENCE OF ESTEEM,  
IS RESPECTFULLY DEDICATED  
BY HIS FRIEND,  
**THE TRANSLATOR.**



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CHAPTER 1

The first part of the book discusses the history of the subject and the various methods used to study it. It covers the development of the field from its early beginnings to the present day, highlighting the contributions of key researchers and the evolution of theoretical frameworks. The text also explores the practical applications of the research and the challenges faced by the community. The second part of the book focuses on the current state of the field and the future directions of research. It discusses the latest findings and the ongoing debates, as well as the potential for new discoveries and the role of interdisciplinary approaches. The book concludes with a summary of the main points and a call to action for the research community.

## PREFACE.

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THE original of the following Dissertation, is from the classick pen of Dr. Gregory, professor of medicine at Edinburgh, and author of the *Conspectus*. It was written for his inaugural Thesis in the year 1774, under the title “*De Morbis Cœli Mutatione Medendis*,” enlarged and amended by the author in 1776, and republished in 1785 in the “*Thesaurus Medicus Edinburgensis Novus*.” It is from this last edition that the translation is made. This dissertation, besides its classical Latinity, contains many useful observations and important facts on the subject of which it treats. The reasoning of the author is sound, his arguments pertinent, and his conclusions correct. He has treated an interesting subject judiciously and with ability, and satisfactorily demonstrates the powerful operation of climate on the physical and moral constitutions. The pathology of this work is not the least important part of it. The

arguments in favour of a change of climate, in the treatment of many of the diseases which afflict the human race, are all logically deduced from an attentive consideration of the causes and symptoms of the diseases in which the author deems it expedient to recommend it: and it is believed that the translation may be useful as a mean of giving information, on a subject not particularly treated in any other medical work in the English language. All the notes added are by the translator, and they are intended to convey such observations illustrative of the text, as his practical experience, while a surgeon in the navy, enables him to offer. With regard to the mere diction of the English version, but one end has been aimed at, which is, to render into intelligible English, what was believed to be the true meaning of the author, and never deviating even from the actual phraseology of the original, excepting in those instances where an adherence to it would have been incompatible with the idiom of our own tongue. As no liberties have been taken with the original, but have been on the contrary sedulously avoided, the reader must not look for, and he certainly will not find, the embellishments of style. If the translator has succeeded in present-

ing the publick with a literal and faithful version of the original into clear and unvarnished English, he will have accomplished his design, and be satisfied. He has not relinquished his intention, announced some time since, of presenting the medical publick with an English translation of the *Conspectus Medicinæ Theoreticæ*. An engagement with a bookseller, is all that is necessary to enable him to comply with his promise.

#### THE TRANSLATOR.

No. 222, Walnut-street,  
Philadelphia.

TABLE OF ERRATA.

- Page 38, line 2 from the bottom of note, for *vascillancy*, read *vacillancy*.  
Page 41, line 5 of note from the top, for *neçisse*, read *neçesse*.  
Page 63, line 7 from the top, for *vascillation*, read *vacillation*.  
Page 113, line 10 of the note, for *patient*, read *patients*.  
Page 131, line 6 from the bottom, for *vascillating*, read *vacillating*.  
Page 82, line 1 of the note, leave out the word *General*, between parenthesis.  
Page 171, line 4 from the bottom, for *concommitants*, read *concomitants*.  
Page 174, lines 5 and 7 from the top, for *vicera*, read *viscera*.  
Page 174, line 9 from the top, for *Carribbean*, read *Caribbean*.

A DISSERTATION, &c.





A

# DISSERTATION

ON

## THE INFLUENCE OF A CHANGE OF CLIMATE. IN CURING DISEASES.

### SECTION I.

General Observations relative to the effects of Climate on the Human Constitution, and especially respecting the effect of that of Great Britain on the Inhabitants.—Remarks on the Constitution of the Air, and its *modus operandi* on the Solids and Fluids of the body; also, of the Disorders induced by its inclemency, and the sudden vicissitudes to which it is liable.—Of the effects of Sailing on the System, and the peculiar kind of Nausea, Vomiting, and Exercise, arising from it.—Observations tending to prove that a change of Climate may reasonably be expected to cure many obstinate Chronick Diseases, and more especially those Endemical to the inhabitants of Great Britain.

**MANY** of the diseases which afflict the human race, are endemial to certain countries; while in others they rarely, or perhaps never occur. The temperature of the atmosphere certainly produces various affections of the human system, so that the most of those disorders may be easily attributed to the per-

C

nicious properties of the air, aided in their operation on the body, by the influence of climate. There is a surprising difference in the mental constitutions, as well as in the corporeal systems, of the inhabitants of different countries; and in addition to this circumstance, each revolution of the seasons of the year is accompanied by a train of diseases peculiar to itself, which it ushers in on its approach. Climate, and the state of the air, manifestly induce a predisposition to many disorders, and copiously abound also, as is very evident, with the exciting causes of disease. We well know that winter produces various chronick complaints, which resist every medicine that may be exhibited for their relief, during a continuance of that season; yet these very disorders are cured with the utmost facility on the approach of summer. It is a well ascertained fact too, that there is so great a variation in the state of the air in different countries, nay, even in the same country during the different seasons of the year, that the effects it produces on the system, are entirely dissimilar. Hence it is evident, that many disorders originating from an intemperate climate, might be prevented and cured by a change of air. That this is incontrovertibly true, we infer from the fact: that innumerable

maladies, after having baffled all the powers of the medicines that had been employed for their cure, disappear spontaneously, or become mitigated, by changing the climate,<sup>1</sup> or upon a revolution of the season; and we are confirmed in the verity of this proposition, by the opinions of the physicians of ancient times, who accord with those of our own day, in believing that a change of climate will prove eminently beneficial in a variety of complaints, that are curable with difficulty by any other means.

In this essay, we shall attempt to advance some opinions relative to certain disorders endemial to our climate, and respecting the feasibility of their cure by a change of air. We will, however, previously

<sup>1</sup> Every naval surgeon must have had occasion to observe, what it has repeatedly happened to me to see: that almost all patients on ship-board, labouring under obstinate chronick complaints, which could in no way be managed or subdued in port, are cured spontaneously after a voyage of a week or two; especially if the vessel should have sailed from a port open to turbulent winds and intemperate weather, to a milder climate: or to another place, screened from the piercing blasts that sweep away the unfortunate victims of breast complaints, from the sick-bays of our ships during the winter season.

offer some remarks respecting the manner in which the climate of this country, in particular, injures the constitution.

Observations have clearly ascertained that countries which enjoy a moderate, mild, and equable climate, are the most salubrious; and those that are hot, cold, or humid, the most pernicious to health, especially if they should be subject to sudden vicissitudes of the weather. Celsus long since remarked, that countries equably warm, or uniformly cold: and such seasons of the year as are remarkable for a like uniformity in heat or coldness, are the most favourable to health; whilst those on the other hand, characterized by excessive variableness, are highly injurious. The truth of this observation is evidenced in the island of Great Britain, where the air during the four or five summer months is moderate and generally bland, dry, and equable; hence during this period it is universally agreeable and salubrious; all the remaining part of the year, however, it is cold, humid, and variable; and consequently productive of excessive unhealthiness.<sup>2</sup>

<sup>2</sup> The climate of Great Britain is a peculiar one, and the state of the air variable in the extreme. A momentary glance

Physiology teaches us, that a due motion and circulation of the fluids throughout the whole system, are necessary to ensure the health of every part. Whatever therefore has a tendency to impede this healthy action, will accordingly derange the system.

at its geographical situation, will explain the cause of this versatility of the weather, as well as of the turbulence of the prevailing winds throughout the year: and the almost constant haziness of the atmosphere during the winter, autumn and spring months. Being an island pretty far north, and not any part of it being much more than sixty miles from the sea, the air is generally cold and moist, and though the sea air itself from its moisture, has no unhealthful effect on the constitution even of a valetudinarian, yet it has always been remarked that places lying immediately in the face of its influence, are rendered unhealthy by it. Hence it would seem that the insalubrity of the air in the vicinity of the sea is derived from some adventitious quality which it somehow receives in its passage over the land. We may form some idea of the degree of moisture the atmosphere of an island like Great Britain, surrounded by the sea, must be endued with, when it is computed that from the Mediterranean Sea only, 5280 millions of tons of vapour rise in a summer day; it is true the evaporating causes are not so powerful in the sea surrounding Great Britain; but yet the moisture must be considerable. In Great Britain the winds two-thirds of the year are in the southerly and westerly quarters.

Dr.

Now, cold air, especially if it be humid, has a powerful effect in checking perspiration and in impeding

Dr. Campbell, in Lancaster, (England,) in the course of seven years found the winds to be in this proportion:

Westerly,	216 days in the year.
Easterly,	149

The direction of the winds was observed at Dover for three years, and they were

Westerly,	321
Easterly,	173

In the city of Edinburgh the winds were observed to blow as follows:

Anno 1797. West 256 days—East 109 days.

1798. West 250 days—East 115 days.

Vide Transactions Roy. Soc. Edin.

There is some similarity between the climate of England and the United States during the spring and winter seasons. The sudden transitions of the weather from the extremes of heat to cold, and vice versa, are as remarkable here as in Great Britain: and from actual observation I have found that the effects of these vicissitudes on valetudinarians on ship-board, are singularly similar and fatal, in both countries. There is this difference however in the relative state of the

the circulation of the blood through the external parts of the body. For the external application of

atmosphere, that in England it is always more humid, especially during the winter time, a circumstance undoubtedly owing to the vicinity of the sea. And though in the interior of our country, and in the Atlantic states, at the distance of eighty or an hundred miles from the ocean, the air is generally dry; yet in the tracts of country lying immediately on the sea-board, it is marked by the same humidity as that of England. Whether the state of the atmosphere in the United States is actually purer than that of Great Britain, is, I think, problematical, although Dr. Williamson leans to the opinion that the air of America is more pure than that of the countries of Europe. This he infers from the circumstance of our repeated and successive clear blue skies, which may be observed night after night in the United States, adorned by countless stars; and these he remarks are seldom equalled in those parts of Europe frequented by travellers. (See his *Essay on the Climate of America, &c.*, page 175.) From this similarity of climate we may naturally expect that the diseases of this country will also be allied, and accordingly we find consumption and affections of the breast, very common in the eastern states. Hence we may infer that in cases similar to those for which Dr. Gregory recommends a voyage to a milder climate, much advantage may be derived from travelling, either by land, or by sea, from the northern and middle states to those of Carolina and Georgia.



of cold constricts the vessels and pores of the skin, while excessive moisture relaxes the muscular fibres, weakens the contractile powers of the heart, and certainly diminishes the action of the arteries. The blood, consequently, is not propelled to the external parts of the body with due force. Whether this however be the cause of the diminution, or whether it arises from other sources, it is unquestionable, that the perspiration is very considerably diminished during the prevalence of cold or moisture.

The most imminent danger, however, arises from the sudden changes of the weather, which occur so frequently, nay, we might almost say daily, in this island.<sup>3</sup> It is by the effect of these transitions, that

<sup>3</sup> Whether this inconstant state of the air has really a prejudicial influence on the corporeal strength and health, seems to be doubted by highly respectable authorities. We are told, by Dr. Rush, in his account of the climate of Pennsylvania, that "its variable nature does not render it *necessarily* unhealthy." In substantiation of this opinion, he quotes Dr. Huxham, who has, he says, "taught us that the healthiest seasons in Great Britain have often been accompanied by the most variable weather. His words," continues Dr. Rush, "convey a reason for the fact." "When the constitutions



the circulation of the fluids is most disturbed; for when the external surface of the body becomes suddenly chilled, and the extreme vessels consequently constricted, the blood flowing freely and directly to

tions of the year are frequently changing, so that by the *contrast* a sort of *equilibrium* is kept up, and health with it; and that, especially if persons are careful to guard themselves well against these sudden changes. [Huxham's Observations on the Air and Epidemic Diseases, Vol. I. p. 5.]” Whatever be the physical operation of these vicissitudes on the body, on land, it is very certain that their effects at sea on the system, are neither trifling nor salutary; for I have never failed to remark, during my practice in the navy, that sailors always suffered more or less from the *sudden* transitions of the weather. I must not omit to mention, however, that these effects of the quick changes of the weather, were seldom so frequent among the officers, and other persons on board, however great their exposure might be, who took more precautions to guard against danger than the improvident sailor can ever be brought to do. One thing is certain, that the changes of the weather in a climate where heat and cold prevail alternately, to a great degree, during the different seasons of the year, have no little influence on the moral state of the system. “The effects of a climate of this kind,” says Dr. Falconer,\* “have not, as far as I know, been re-

\* Remarks on the influence of Climate, &c. on the Disposition, Manners, &c. &c. of Mankind, 4to, p. 24.

the superficial parts is checked, and impelled immediately from them, inwardly, producing a copious and violent regurgitation. In like manner, when the invisible cutaneous pores are clogged up, the perspiration is checked; and this is undoubtedly the most indispensable of all the excretions. These are the causes that produce internal congestion of the blood, which is frequently followed by inflammations and hemorrhages; they likewise engender fevers, and a

marked by any modern writers, but did not escape the observation of Hippocrates; though the countries he seems to rank in this class are, indeed, such as undergo considerable varieties in temperature at the different seasons; many parts of Europe for instance; but are still what are at present esteemed to be in a moderate climate, and by no means subject to such vicissitudes as a great part of North America, and that vast continent between Asia and Europe, called Siberia and Tartary. Hippocrates observes, (*Hippocrates de æribus, aquis, et locis*, § 39. 53, 54, 55.) that in such a climate, the shape and character of the people are much less uniform, than in either a hot or cold country. This appears very probable, as the climate partakes of the extremes of both. He also thinks, that ‘variations of climate make men more active in the affairs of life, more brave and resolute in their conduct, and more austere and rugged, though more upright and just in their behaviour.’ ”

great many other diseases. It is not surprising, therefore, that our climate should be productive of a variety of dangerous maladies, nor that persons of the strongest constitutions should be afflicted with serious disorders. Generally, however, with the assistance of nature, we can easily guard, in healthy and vigorous temperaments, against every danger accruing from the climate, so that no disease will ensue from its effects, and even should any disorder affect the system, it will be of short duration.

In many cases of dangerous disease, nature herself, as every physician knows, spontaneously affords the best remedy; and she certainly prevents by her powers, the accession,—or banishes when they may have arisen—innumerable disorders that could scarcely be cured by any other means. This happens in the case under our consideration at this moment, for as soon as the impetus of blood to the external parts is checked by the operation of cold, the action of the heart and arteries is simultaneously increased, and the pulse augmented in frequency and force. In consequence of this increase in the contractions and dilatations of the heart, the constriction of the extreme vessels which impeded the natural motion of the

blood is soon overcome and entirely removed; hence the customary distribution of the fluids, and the wonted equilibrium of the circulation are perfectly restored. But if the constitution shall have previously become feeble and enervated, or predisposed to any disease, it will not be able to bear the same unseasonable transitions of climate without injury. The *vires medicatrices naturæ*, which, under more propitious circumstances, guarded the system against danger, and restored it from disease to health, are inefficient here. And it is very probable, that some particular part of the body which may have been previously weakened or disordered, and which, consequently, has become incapable of sustaining the shock,—will be rendered the subject of an incurable malady.

Thus it is, that the human constitution, provided indeed it be vigorous and sound, accommodates itself so surprisingly to all variations of climate, from the coldest to the temperate, and the more fervid; that for the most part it suffers no injury from their diverse temperatures.<sup>4</sup> Cold and moist air, such as

<sup>4</sup> “Perhaps no climate or country is unhealthy, where men acquire from experience, or tradition, the arts of ac-

prevails in Great Britain, is the least favourable to perspiration, and an equable distribution of the fluids; but nature has so amply provided for that inconvenience, that the natural circulation of the fluids, in so far as is essential to health, is sufficiently promoted: consequently, those who are blest with sound and robust constitutions, suffer little or no detriment from this cause. Yet we see, notwithstanding, many instances, in which the healthiest temperament affords no barrier to the hurtful incursions of the climate of this country. It is probable, that there are critical and dangerous periods in some constitutions, and without doubt there are idiosyncracies arising from peculiarities in the manner of living, as well as from the various conditions of men, and from other causes not accurately investigated, which render persons who are in other respects perfectly vigorous, liable to diseases incidental to climate. It should be remarked, however, that although the irregular and unseasonable variations of the weather, do certainly

commodating themselves to it. The history of all the nations of the world, whether savage, barbarous, or civilized, previous to a mixture of their manners by an intercourse with strangers, seems to favour this opinion."—*Rush on the Climate of Pennsylvania.*

exert most powerful effects on the constitution, and tend to produce many serious disorders; yet it happens, not unfrequently, that evils are imputed to the influence of climate, which in fact it has but little agency in generating; and which really derive their origin altogether from other sources. For in every clime, however variable and insalubrious it may be, we find inhabitants enjoying perfect health; and no portion of the terraqueous globe gives birth to any race of beings, that are liable to be annihilated by the destructive effects of the climate they inhabit. It has not ever been observed either, that other animals are injured by the influence of their native clime, however insalubrious and intemperate it may be, and even under circumstances of the greatest possible exposure to the power of its severity. We surely cannot doubt then, that men may be able to endure the irregular transitions of climate without either injury or danger, provided they live temperately. Nor can we for a moment believe, as we should by admitting a contrary position to be true: that the creator and preserver of the human race would subject mankind to a condition so rigorous and unjust. Besides, those men who are accustomed to a rude, and labo-

rious life, who are but little regardful of the unseasonableness of the weather, to the vicissitudes of which they are continually exposing themselves, certainly live in the enjoyment of health and vigour like other animals; nor was it till he discovered and brought to perfection, artificial means of defending the body generally, from the extremities of the seasons, that man was subdued by the severity of his native clime. Those, therefore, who are unskilled in the means of avoiding or guarding against the extremities of weather, seldom suffer any inconvenience from it; and it is only in proportion as men become afraid of exposing themselves to the intemperance of the air, and sedulously endeavour to avoid it—that they are rendered very susceptible of its effects. There is certainly but one method, by which men are enabled to defend themselves against the rigour of an unhealthy climate; namely, by rendering their constitutions so vigorous and robust, that they are in a situation to encounter and endure, the danger and inconvenience they cannot shun. It is not surprising therefore, that those who are accustomed to polished life, and to indulgence in various luxuries, should be solicitous to elude the rigorous excesses of the weather. For if, from the causes we have men-



tioned, we find that men in other respects very robust, and in the full enjoyment of perfect health, can scarcely endure this severity without annoyance; how much danger is not to be dreaded for those who have inherited from nature, less healthy constitutions—who, from living intemperately, or otherwise unhealthfully, have rendered their systems subject to various disorders—who from ill health, or from whatever cause are broken down and exhausted in strength—or finally, for those advanced in years, or continually inclined to depression of spirits, and in whom all the natural powers of the mind and the body are wasting away by degrees!

It is in cases then of this nature, that we should seek another climate blest with the cheering aspect of a clear and serene sky, assisted in its happy effect upon the feelings by the genial influence of soft breathing zephyrs. Where the prevalence of pleasant and more agreeable manners and livelier scenes are calculated to soothe the feelings, to promote cheerfulness, and to revive the declining powers of nature.<sup>5</sup> But let us pass on to the consideration of other

<sup>5</sup> Dr. Cheyne in his most excellent work on health and long life, tells us with singular brevity and quaintness, that



arguments tending to prove the efficacy of a change of climate in many diseases.

How limited is human knowledge! How rarely does it scrutinize the unerring and indispensable causes of things! Even on our art, the light of science has, as yet, but coruscated! For as yet the nature of many diseases, as well as their remote and proximate causes, are either totally unknown to us, or at least but imperfectly comprehended. Whenever, therefore, we observe a disease endemial to any country, which seldom occurs under another sun, it is highly probable that this disorder is caused by

“if the aged would lengthen out their days, they should remove to a warmer climate, by which they may live as long as a *crow!*”—London edition of 1725, page 206.

We are told too, that “the citizens of Rome who had worn down their constitutions by intemperance, added many years to their lives, by migrating to Naples, and enjoying there, in a warmer sun, the pure air of the Mediterranean. And Sir William Temple says the Portuguese obtain the same benefit by transporting themselves to the Brasils, after medicine and diet cease to impart vigour to their constitutions in their native country.”—*Rush's Obser. on Gout. Inquiries*, Vol. II. p. 319.

the influence of climate, and we may reasonably expect that the patient labouring under such complaint will be benefited by travelling into a country exempt from the same disorder. And from the want of other and more certain sources of reasoning, I have supposed that an argument in favour of my opinion, might be deduced from this principle, and though indeed it is an uncertain one, yet I cannot think it altogether contemptible.

In many diseases indeed, the proximate causes of which we are acquainted with—the curative indication consists in promoting the perspiration, and restoring the due circulation of the blood to the external surface of the body, so that an excessive determination to the internal parts may be prevented; or, if it shall have already taken place, that it may be immediately removed. Now I do not know of any remedy by which all these objects can be more speedily, more safely, or more agreeably accomplished, than by a change of climate; and this change must be effected by means of a journey into a country enjoying a moderate degree of warmth. A new climate is preferable as a remedy, to every thing else, because the patient can derive the benefit of it

not only for a few hours together, but for many months, nay, should it be necessary—for many years; and it is well known to physicians that many of those diseases which are denominated chronick, are so obstinate and difficult of cure, that a great length of time is required to subdue and remove them, even when the best and most efficacious medicines are daily employed; nor are they unacquainted with the fact, that many medicines which act with great power on the system, will not bear to be frequently repeated for any length of time. The continual exhibition of such active medicines for a long while injures the constitution, and in fact induces new disorders. Some, by continued use, lose their pristine virtues, and then consequently they produce no beneficial effect on the system; others, though safe and efficacious, become by long repetition so extremely unpleasant and ungrateful to the sick, that rarely is a patient willing to persist in their use sufficiently long to receive any benefit. But this remedy may be continued for a considerable time, not only without danger, but actually with the greatest advantage! It neither injures the constitution—nor loses its virtues by repetition—nor does it become unpleasant to the sick! It is on the contrary, for various

reasons, truly grateful. Neither does it debilitate the system, but, for the most part, greatly strengthens it. And lastly, if a change of climate is not of itself sufficient to remove the disorder, we should seek the adventitious aid of all the other remedies which have been useful at home. For all things are to be found in a happier clime, and they are often rendered more efficacious under the genial influence of a foreign sun.

But there are some maladies, whose proximate causes, if they be not altogether hidden from our view, are at least veiled in uncertainty: while their remote, predisposing and occasional causes are sufficiently obvious. And it is evident to the observation of medical men, that the remote predisposing and exciting causes of many diseases, arise from the influence of our climate. That is to say, in the colder countries you will find a certain tendency to inflammation in diseases, usually denominated phlogistic diathesis, prevailing almost universally among the inhabitants, especially during the winter and in the spring. But in warmer countries, as is the case also with us in the summer season, this inflammatory disposition is not so common. Hence we may reasona-

bly expect, that this disposition, whatever it may be, will either be entirely obliterated by a change of climate, or at least that it will be greatly mitigated.

In cold countries too, especially in those where a cloudy, moist and gloomy atmosphere depresses the spirits, all the faculties of the mind, as well as the powers of the body, grow feeble and enervated.<sup>6</sup> The system becomes weak, languid and inactive, while the spirits grow dull, dejected and apathetick, of course the disposition is inclined rather to melancholy than

<sup>6</sup> This position is, I think, questionable; and that it is so may be inferred from an attentive consideration of the direct action of cold upon the body, and its indirect effect upon the mind and disposition. The indirect action of external or atmospherick cold on the mind and feelings, is produced through the influence of its immediate effects on the corporeal system. These effects are palpable to the senses, and simultaneous with the application of this powerful agent to the external surface of the body. Cold evidently blunts the acuteness of feeling; and this it does by so wrinkling the skin, that the cutaneous pores are corrugated and contracted in diameter. It operates also upon the cutaneous glands, by closing or clogging up their orifices, so that the free admission of the irritating matter which in this or some other way, causes sensation, is prevented. Hence the intensity of cutaneous feeling, is considerably diminished. The external

cheerfulness. Hence is produced, as I shall afterwards have occasion to show, a tendency in the

action of cold on the skin diminishes the quantity of perspiration. It also affects its tenuity, rendering it thick and more viscid. These combined effects produce a powerful influence on the mind, rendering it less sensible of the external impressions on the body; and by thus blunting the power of feeling, it renders the general system more insensible. The physiological operation of cold on the mind, and consequently its effects upon the temper, the disposition, and the feelings, cannot appear ambiguous, when we advert to its evident effects on the body as just described. That the character would in some measure be affected by these causes, seems natural to suppose. Accordingly it has been decisively asserted, and I believe with no little truth, that the inhabitants of cold countries are not subject to those violent vicissitudes of temper and that versatility of disposition, which characterize those of hot climates, where the highly excited sensibility of the system, and the almost morbid tenderness of feeling, render the people susceptible of every varying impression to which the constitution is physically exposed. Hence the disposition of the inhabitants of cold countries, is more faithful, immutable and brave, and the behaviour more consistent, than that of people dwelling under the enervating influence of a fervid sun, and ever liable to the vascillancy of a mutable and capricious climate. Though these peculiarities in the constitutional tem-



system to be affected by certain diseases. Now it is universally known that the case is exceedingly dif-

per of the inhabitants of cold countries, are generally ascribed, exclusively to the positive and direct action of the frigid air: yet it must not be forgotten that there are other causes indirectly generated by the coldness of the climate, and some that are wholly independent of any such influence—that have no little agency in assisting and confirming the effects of air upon the physical and moral constitutions: such for example are food, clothing and exercise; as well as religion, government and laws. But even allowing for the adventitious aid of all these causes, the dominion of the effects of climate over the form, stature, and health of the body, is active, evident, unequivocal. Some writers, however, have leapt beyond the *possible* effect of the causes which are derived from climate, in the overstrained hypotheses they have promulgated, and which they have predicated on the physical and moral influence of climate on the human subject. In these ingenious though sometimes crude, unphilosophick, and not unfrequently chimerical theories, which indeed ought only to be viewed as the effusions of vivid and fanciful minds, they have not hesitated to refer all the variations in human constitution, form, stature and complexion: as well as all the inflections of the variable, nay, even changing human character; together with all the grades in morals, from the turpitude of vice to the beauty of virtue—to the effect of climate alone! While this subject is before

ferent in countries moderately warm, dry and clear; for the inhabitants, at least generally, possess great activity of body, and enjoy an equable flow of spi-

me, I cannot refrain from quoting a passage from the ingenious and learned inaugural dissertation of my friend Dr. Gibson, now Professor of Surgery in the Baltimore College of Medicine. Its pertinency to the subject of the preceding remarks, is, I trust, a sufficient excuse for the citation:

“ Præter diætam et artificium, sunt et aliæ causæ quæ ad figuram corporis humani mutandam aliquantulum conferre possunt: huc spectant imitatio, varia exercitationis genera, vestimenta, scientia, religio, animi pathemata, cælum, et quædam alia. Non forsan alienum erit pauca de cœli effectibus monere, etsi meo quidem judicio, in mutationibus figuræ animantium inducendis multo minus valet, quam nonnullis persuasum est. Dicitur staturam admodum humilem Indorum Eskimotarum, et quarundam aliarum gentium septentrionalium deberi frigori maxime intenso, cui perpetue objiciuntur in iis regionibus quas incolunt. Tschutski tamen in terræ plaga æque frigida saltem, si non revera frigidiore, degunt, nihilominus inter homines procerissimos jure recensentur. Minutam Eskimotarum staturam e genere cibi potissimum pendere colligerem, oleo enim Phocæ Vitulinæ, et Phocænx maxime aluntur.\* Hippocrates cœli regionem

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\* Ellis' Voyage, &c.



rits. It is not difficult to believe then, that travelling in such countries would greatly correct and improve the gloomy disposition of which we have just spoken, and perhaps banish it entirely. There is another advantage that we certainly derive from a change of climate, and it is one of great importance, namely, guarding against the occasional causes of many diseases. It is generally known that many severe disorders generated in this island, originate in the sud-

in figura mutanda non parum valuisse opinatur, sic enim pergit, ‘ Quicumque autem altam habitant regionem, planam, ventis expositam et aquosam, eorum formæ magnæ ac invicem similes et erectæ. Qui vero macra, aquis carentia, et nuda loca tenent, horum formas necisse est esse asperas et vegetas.’\* “ Vitruvius quoque huic sententiæ addictus est, verba ejus citare liceat,” ‘ Ex roscido ære sub septentrionibus nutriuntur gentes immanibus corporibus, candidis coloribus, directo capillo et rufo, oculis cæsiis, sanguine multo, quoniam ab humoris plenitate, cæli refrigerationibus sunt conformati. Qui autem sunt proximi ad axem meridianum, subjectique solis cursui, brevioribus corporibus, colore fusco, crispo capillo, oculis nigris, cruribus invalidis, sanguine exiguo, solis impetu perficiuntur.’†—*Dissertatio Physica de Forma Ossium Gentilitia, auctore Gulielmo Gibson, p. 92.*

\* De Ære, Aqua, et Locis.

† Vitruvius de Architectura, tom. vi.

den changes of the weather; and the danger arising from this source is scarcely evitable any other way than by travelling into temperate countries, where the weather, even of the winter season, is not at all liable to such sudden transitions. It follows therefore, that all the remote causes of such diseases as arise from the effects of our climate, may be avoided or abated in their pernicious effects by a change of air; and we all know of how much importance it is in the cure, we might almost say, of every malady, that these causes should be quickly removed.<sup>7</sup> A disorder

<sup>7</sup> A striking instance of the efficacy of removing patients from the place where the disease is produced, is related by Mr. Volney. It goes far to prove, that sometimes a very circumscribed space is within sphere of the action of the remote causes of a disease, and consequently that a removal of the patient to a little distance only, from this local influence, may oftentimes have a very beneficial effect. I will cite the passage in his own words: "In Corsica, fevers of the same kind regularly annoy several military posts in the island every year, and among others the little harbour of San Fiorenzo, bordering on a pestilential marsh of forty-five acres. Toward the end of summer, and in the first six weeks of autumn, they assume a putrid and malignant character, in consequence of the intensity of the heat and the exhalation; and it is necessary to relieve the French garrisons

frequently meets with a speedy cure after the removal of its remote causes, without the administration of

every fifteen or twenty days, either wholly or in part, otherwise the soldiers would sink under their serious and ultimately mortal effects. Our physicians, after trying many remedies, remarked, that two posts alone in the whole island were absolutely exempt, and that no fever ever approached forts Vivario and Vitzavona on Bogognano. Chance, as frequently happens, rendered the salubrious and even curative quality of these two situations more striking. A Swiss officer from the Grisons fell dangerously ill of the fever at San Fiorenzo, and having requested to be removed to fort Vivario, the garrison of which belonged to his own regiment, he was restored to life and health in less than a fortnight. The physician having repeated the experiment on some French soldiers in the hospital, it succeeded so well, that it has become the established practice, to send thither all the desperate cases of fever, which appear to be past the power of medicine; and it is observed, that the fever has never held out there beyond the eleventh day."—*Volney on the Climate and Soil of the U. States*, p. 289.

In addition to the above fact, I can state from my own knowledge, two circumstances no less illustrative of the position advanced by Dr. Gregory in the text. They occurred on board of the late United States Frigate Essex, while I was surgeon of that vessel. We were anchored in Plymouth

any medicines whatever; for the powers of nature are alone sufficient to cure diseases, when every obstacle

sound (England) from the 11th of January, 1811, till the 14th of February following, and although we arrived there after a cold and stormy passage of fourteen days from Port Louis roads, in France, we had but fourteen cases on the sick list.\* Plymouth sound is exposed to the piercing cold and moist winds from the British channel, as well as the frigid blasts from the bleak shores of Cornwall and Devonshire; the number of sick of consequence soon increased, and in fact in a few days the sick list, which was daily augmented, was crowded with many cases of pleurisy, violent inflammatory catarrhs, and numbers of bad colds, all of which I found it difficult to subdue. On the fifteenth of February, the ship was got under weigh and moored in Barnpool, immediately under the elevated shores of Mount Edgumbe, which effectually sheltered the decks from the channel winds, while the neighbouring mountains on the other side, screened them from the penetrating shore-blasts. A day or two after this, all the patients began to mend, and in a few more they were quite recovered. The other fact is not less interesting, and is as follows: We arrived in Cowes Roads, Isle of Wight, on the 12th of April, 1811, from Cher-

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\* Four of this number were consumptive patients received from a French hospital, of whose cases I shall afterwards have occasion to say something, two of Catarrh, one of Scrophula, one of Hydrops Articulii, two of Syphilis, three of Chronick Rheumatism, and one of Contusion.

to the recovery of the patient is taken away. Sometimes however, the injury which the system has re-

bourg, in France, having only anchored after our passage from that place one night at St. Helens. At this time we had but eleven on the sick list, although a day or two after I learned that the British fleet at Spithead, no great distance from us, had been visited by an epidemick catarrh, or influenza, which was rapidly extending itself.\* The air was

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\* The following was the state of the sick list after the day of our arrival at Cowes:—

On the 13th of April there were sick,	14
14th, also, - - - -	14
15th, - - - -	13
16th, - - - -	14
17th, - - - -	14
18th, - - - -	16
19th, - - - -	15
20th, - - - -	13
21st, - - - -	13
22d, - - - -	18
23d, - - - -	14
24th, - - - -	14
26th, - - - -	10
27th, - - - -	9
28th, - - - -	9
29th, - - - -	10
30th, - - - -	10
1st of May, - - - -	11
2d, 3d, 4th, 5th, & 6th, same,	11
7th, - - - -	70
8th, - - - -	78
9th, some chronick cases discharged, { - -	70
10th, - - - -	77
11th, - - - -	99—sailed from Cowes Roads.

ceived from these causes is so extensive, that even in the event of the patient being removed beyond

moist, cold and hazy, and the wind very variable. In a few days this influenza appeared on board of the Essex, and the sick list increased till the eleventh of May when it was at its maximum, there being on it 99 cases of violent inflammatory catarrh. This complaint had been daily extending itself throughout the ship, and had we not left that anchorage I have no doubt but that in a few days, every creature on board would have been affected with it. On the eleventh however we sailed from Cowes and anchored in the afternoon of that day in Yarmouth roads, Isle of Wight. I found all the patients better on the next morning, and discharged forty-four. We left Yarmouth that morning, and sailed out of the English Channel at mid-day on the thirteenth. From this time the list rapidly decreased, so that on the seventeenth following there were but fourteen sick. I must not omit to mention that the same plan of treatment was pursued throughout, so that the change of place, assisted perhaps by the motion of the vessel, and the sea-sickness, effected the cures.

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12th of May,	44 discharged,	55—Yarmouth Roads.
13th,	6 more discharged,	49 remaining.
14th,	7 discharged,	42 remaining.
15th,	3 discharged,	39 remaining.
16th,	6 discharged,	33 remaining.
17th,	19 discharged, and	14 remaining.

The sick list remained pretty nearly in this state, and on the first of June there remained on it but twelve, and most of those were chronick cases, and contusions from accidents.



the sphere of their influence, it requires the judicious use of proper medicines for a long course of time, before the constitution can be restored to its former healthiness. Yet even in these instances, the same caution is necessary to be observed in the curative intention, namely, the removal of the remote causes; for the cure of no disease can ever be reasonably expected, while its causes continue to operate—since they daily renew and augment the mischief they first produced.

Lastly, there are remedies which are nearly allied in their action upon the system, to the effects of a warm climate. For instance: the warm bath, mild diaphoretics, especially diluents, warmer and more abundant clothing than common, particularly flannel jackets worn next to the skin, frictions, frequent and moderate exercise—all excite perspiration, and promote an equable circulation of the fluids. Remedies of this kind, as well as moderate heat, such as prevails in this island during the summer season, are of great use in various disorders. And since a moderately warm climate is observed to produce similar effects, is it not very reasonable to advise a journey into countries enjoying such a climate? Thus then from ana-

logy of the effects produced by the remedies we have mentioned, it may easily be inferred, that a change of climate promises, in many disorders, great advantages.

Finally, from attentive consideration of those circumstances which have an injurious effect upon any particular disorder, we may plainly deduce the inference: that a change of climate will prove a useful remedy. For example: cold air inspired into the lungs excites coughing by producing an oppression of the chest; now this very agent increases the disease. Gouty persons also suffer not a little inconvenience from the same cause (to wit, cold air.) Yet persons so affected have it not in their power to avoid such an inconvenience without going abroad into other countries, since their continuance in this island subjects them to perpetual exposure to its noxious atmosphere. Experience proves therefore, that in these and similar cases there is something in our climate prejudicial to the sick, and though it may not absolutely be the cause of the malady, yet we may reasonably conclude that a change of air would be of advantage: since great inconvenience and hazard, scarcely evitable in any other manner, will be easily warded off.



For these reasons particularly, if I am not mistaken, a change of air by means of a journey into countries that have the advantage of a moderately warm, dry, mild, and uniform climate, will be of infinite service in many diseases incidental to this island. It must be observed however, that whatever benefit the sick derive from such a journey, must not be attributed altogether to a change of air and climate, since they receive at the same time the advantage of gentle and long continued exercise, which itself acts as a remedy scarcely less efficacious, in many complaints at least, than a change of sun. When the situation of our patients is such as to require a milder climate, they are often obliged to perform a long journey of many weeks; and all physicians know that such journies produce powerful and often salutary effects on the human system. In a dissertation on the effects of a change of climate, the virtues of exercise are not indeed particularly to come under consideration; yet I do not think it foreign to the purpose to say a few words on this subject. In fact it cannot be deemed irrelevant to our reasoning; for the effect of exercise should always be taken into consideration when we recommend a change of climate. The effects of both indeed are synchronous,

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and they produce nearly the same consequences, at least in the generality of cases, on the constitution. Besides, both reason and experience satisfactorily prove, that moderate and continual exercise, such as arises from a long journey—promotes perspiration and a determination of the fluids to the surface; and there is no doubt but that many sick persons derive great relief from the effect of this exercise alone. Further than this, I am much mistaken if the cures of many diseases which are commonly imputed to a change of air,<sup>8</sup> are not to be attributed to the influence of this exercise.

<sup>8</sup> The common practice in this and other countries of advising valetudinarians to repair to watering places for the benefit of the chalybeate waters, is proved by experience to be a judicious one. Yet so great is the advantage frequently resulting from these visits, that it would be unreasonable to impute it solely to the effect of drinking the waters. To the journey itself undoubtedly, and the exercise and change of scene and air resulting from it, as well as to the invigorating influence of pleasant company and the hilarity derived from new and sometimes facetious companions, is to be referred, all the good effects of these trials. Dr. Rush remarks in his essay on pulmonary consumption, that “the sulphurous and saline air of Libya between Mount Vesuvius, and the Mediterranean Sea, and the effluvia of the pine forests



When it is judged expedient to make trial of a change of climate with a view to its effects as a remedy, a question arises whether the patient should travel by sea or by land? It clearly appears from the observations of many physicians of ancient times as well as of modern days, that a voyage alone, avails in no inconsiderable degree, in many complaints. The celebrated Gilchrist published a beautiful dissertation a few years since, on the medical use of sea voyages, in which he plainly proves the remediate effects of sailing, and indeed it appears from his work, that in many diseases it acts as a most efficacious remedy. He relates the histories of many invalids who evidently were snatched from the very jaws of the grave, as it were, by the salutary operation of this remedy. Many things which occur during a voyage combine without doubt, in producing such an effect; and I am

of Libya, were supposed in ancient times to be powerful remedies in consumptive complaints; but it is probable the exercise used in travelling to those countries, contributed chiefly to the cures which were ascribed to foreign matters acting upon the lungs."—*Medical Inquiries*, Vol. II. Page 145.

not disposed to deny<sup>9</sup> that the moisture and equal temperature of sea air, the saline vapours, and other

<sup>9</sup> The temperature of sea-air is unquestionably more uniform, and warmer than the atmosphere of land. It has also been proved to be purer. Dr. Ingenhousz in a short voyage, instituted a series of experiments with a view to ascertain this fact. These are related in the 70th vol. of the Philosophical Transactions. He is of opinion, that the air of the sea, is, *cæteris paribus*, purer than that of land. His observations however were not made in different latitudes. In an ingenious paper by Dr. Adam Seybert containing observations on land and sea air, published in the Transactions of the American Philosophical Society (Vol. 4. p. 262, No. 32) we have the results of some experiments performed by the doctor in different latitudes, and during different hours of the day. I will give these results in the words of the author:

“ My experiments at sea sufficiently prove that the atmosphere is considerably purer there than it is on land. Though there are some trifling differences in the results of several experiments, I have no reason to believe that they were owing to the different situation in point of latitude or longitude in which they were performed. I can form no system respecting such variations. Winds, temperature, rain, &c. do not seem to have produced them. As they did not observe any regularity in their occurrence, they may perhaps

advantages, may have a good effect. But it is my opinion that whatever benefit is derived from sailing is to be imputed especially to exercise itself. Gilchrist has happily shown that sailing produces a sufficient degree of exercise for health, especially if the vessel be small and the sea rough. He shows also that this

be attributed to certain unperceived errors which are unavoidably attendant on such trials.

“ That the air at sea should appear nearly of the same purity in different latitudes does by no means astonish me; for if land air has certain matters mixed with it they are *perhaps* absorbed; and if my supposition be true, that the influence of the sun’s rays on the water tends to increase its purity, the opinion I entertain is not surprising. For when once purified, there are perhaps none, or few causes to render the air noxious after it is wafted from our towns and cities over a large body of water.

“ It occurred to me that probably the purity of the air at sea varied at different periods of the day: to satisfy myself on this point I made several trials on the 10th and 17th of June last. On the 10th I performed them at 9 o’clock A. M. at 12, and at 6 o’clock P. M. On the 17th at 9 A. M. and at 12 o’clock. The result of all the experiments of the same day was exactly similar, at least not perceptibly different.”

exercise possesses certain advantages peculiar to itself, and in particular cases, far excels all other kinds.<sup>10</sup>

<sup>10</sup> I am sure it will not be uninteresting to give at length, the observations of Dr. Gilchrist on the peculiar kind of exercise produced by sailing. They are so pertinent and true, that I need offer no apology for the quotation.

“Sailing seems to correspond with most other exercises in their manner of acting, or their effects, and indeed to comprehend them all. When it is not vehement it resembles walking, in the gentle continued action of the muscles with which that exercise is accompanied, when used in a moderate degree. The benefit derived from riding depends upon the continued succession which the body suffers, and on being carried with considerable quickness through the air. Now, in sailing, there is a greater succession from the vomiting; and in a ship driven by winds, a person is carried through the air with greater quickness than in any other ordinary exercise. Again, at sea a various action of the muscles is produced by the motion of the ship, and the constant efforts that must be used to prevent falling; by which the body is put into all that variety of constrained, ever-changing attitudes observed in bowling, skating, rowing, and the like exercises, and in common labour. Exercise in a swing, or a coach, which sometimes causes vomiting, comes nearest to sailing, as does likewise our first exercise, the cradle.

“Sailing



Another remedy indeed besides exercise is obtained by sailing, namely, that denominated sea-sickness<sup>11</sup>,

“Sailing then is an exercise compounded of gestation, and that of a particular kind; a preternatural spasmodic motion in vomiting; and a singular action of the air: nor can any other exercise lay claim to so many and such peculiar advantages.

“It is constant: for as the ship is in perpetual motion, day and night, sleeping and waking, one or other of these causes always takes place, contrary to all other exercises, in which the sick are usually employed but a short while together, and the intervals between the times of exercise are long.

“Though sailing, considered in all its complex circumstances, and powerful effects, is reckoned among the highest exercises, so as in some to cause great perturbation, it is really, after being a little used to it, the most gentle, and excites no irregular motion, or undue impetus of the fluids, with subsequent waste of them. Therefore it is not attended with lassitude, or lowness of spirits, with hurry and confusion, as other exercises often are. A man may sit or stand, walk, lean, or lie, as he likes best, and so relieve his body by a frequent change of posture, and prevent weariness. Other exercises of efficacy cannot be undertaken by those

[For Note 11, see next Page.]

which frequently excites nausea and vomiting. This produces powerful, and in some diseases most bene-

who are weak and wasted, under fever and inflammation, or in a colliquative state, and many other such cases; and lower exercises are insufficient for any great purpose of cure. But sailing is of mighty energy, yet safe; and, excepting the seasickness at first, is easily sustained. Scarce any circumstance of a disease in which it is proper, can forbid its use, while the frame of the body or mind is not too much broken, nor any part corrupted: nay, even in this last case it is often highly proper.

“To all these, as farther advantages, we may add, that at sea, you constantly breathe a peculiarly salutary air; and that the action of the air is greater, and increased by your being often carried through it with uncommon velocity. There is likewise a greater action of the muscles, of all the muscles of the body, of muscles not exercised in any other ordinary exercise, or not exercised in the same manner, nor so forcibly, nor with such effects and continuance. Nor is there occasion, in undertaking a voyage, for so many precautions as are necessary to be observed in other exercises.”—*Gilchrist on the Use of Sea Voyages in Medicine*, p. 17.

<sup>11</sup> The prominent features of the *nausea maritima* are striking and deserving of much consideration. When a per-



ficial effects. It was known a long time ago to physicians, that nausea and vomiting were eminently use-

son goes to sea for the first time, he is commonly affected immediately upon his *coming into blue water*, as sailors term it, with slight giddiness of the head and a sense of tightness across the forehead; considerable and distressing nausea; a sense of motion in the stomach, and soon after violent, copious and convulsive vomiting. These effects generally continue for a few days, during which time they are most aggravated by an upright position of the body below decks, and less severe while inhaling the free air on deck, and in an horizontal position of the body when below. The nausea is always painfully increased by the odour of cooked meats, and especially by the disagreeable and peculiar smell of the bilge water pumped up at a regular hour, every evening. The odour from this putrid water is so nauseous and subtle, that it insinuates itself into all parts of the vessel, and while its power on the surrounding air is at its height it equally affects with disagreeable feelings, the veteran seaman and the tyro in sailing, producing on the latter however, infallibly, the most violent and convulsive puking. The motion of a vessel through the water is vehement, rapid, sometimes irregular, and in turbulent weather much interrupted by sudden lurches. That a violent commotion is communicated to the system by these combined motions, must seem evident to every one, but the peculiar effects and operation of it upon the mind and body of the person who may be the subject of

ful in exciting perspiration, and in promoting and restoring the due circulation of the fluids to the ex-

it, can only be thoroughly known by those who have experienced it in their own persons. It must seem clear however, to every reflecting mind, that as this motion of the vessel is constant, though in a greater or less degree, a person at sea must be sensible of some permanent effect on the system, liable to augmentation and diminution in proportion as the weather is calm or turbulent. This accordingly is the case, and there are few persons who are not affected by costiveness, not only immediately after going to sea, but in some degree subject to it all the time they continue there. This effect I believe to be in no way dependant on, or in consequence of the peculiar aliment that is generally eaten at sea, but owing solely to the continual impulse communicated to the stomach and intestines by the rolling, tossing about and pitching of the vessel. I infer this from the fact that this costiveness exists in a greater degree, in persons sailing in small vessels, of which the motion is short, quick, and pitching, than in larger vessels, as in frigates, where it is long and less often repeated in a given time. Now though the more violent affection of the stomach for the most part goes off after four or five days, or at farthest in a week or ten days, there is nevertheless a certain kind of affection of that organ, and which indeed is in a degree communicated to the system generally, that comes on during every heavy blow: namely a sensation when the ship lurches or pitches forwards as if one

ternal parts. They act powerfully also in promoting expectoration, when the lungs are oppressed with

was falling, and upon the rising of the vessel upon the waves again, as if one was raised with it. This sensation, which is felt in the greatest degree when there is a cross or head sea, or when the ship, going before the wind, lurches from side to side, communicates to the abdominal muscles a convulsive and sudden action, so that the whole contents of the abdomen are compressed and expanded alternately with the rising and falling of the ship. This compression consequently operates on the diaphragm, forcing that muscle upwards in the same violent and convulsive manner, so that the viscera of the thorax are also sensibly compressed and expanded with the lurching and righting of the vessel. These effects as I have before remarked are produced with every new turbulence of the sea, and as they are totally independent of the nausea and sickness before mentioned, may be considered as the more permanent effects of sailing. One other effect of the vessel's motion, is the constant and novel action of the muscles of the body, principally those of the lower extremities, to preserve an equipoise and to prevent falling. The centre of gravity constantly altering as respects locality, a continual and corresponding action of the muscles to preserve an equilibrium, is of course necessary; and this continual action of the muscles, novel, sudden and energetick, is the most permanent of the effects of sailing. It is the exercise arising from this action of the mus-

phlegm. A vomiting of this kind however cannot be long employed unless produced by sailing; in this

cles, that brings such invigoration to the debilitated patient; and this action never ceases to be necessary during the slightest motion of the sea, except in a horizontal position of the body, and even then, in blowing weather one is frequently awakened from sleep by an involuntary exertion to avoid being thrown from the berth. I have uniformly observed that those persons who were slightly affected, or affected not at all, with vomiting, or nausea, suffered excessively from an affection of the mind and frequently from acute pain in the head, which was always considerably aggravated by the violent pitching of the ship. Such are the effects of sailing upon the system as I have observed them, both in small vessels as packets, sloops of war, and in larger ones as frigates. I have never witnessed but three very distressing cases of sea-sickness, one a landman on board of the frigate United-States, in whom great emaciation, loss of appetite, and a habitual convulsive retching: which continued after the ship came to anchor: and the other two, which were on board of the Essex, are particularly mentioned in my "Treatise on Marine Hospitals, &c." p. 153.

The exercise of sailing is not only performed in a fine healthy and pure air, but it is constant in itself. The veteran seaman has the same continual action of nearly all the muscles of the body, perpetually exerting its salutary effects on the system, as the young sailor is subject to. But the mind

manner it is not uncommonly excited for many days in succession, or during entire weeks; and experience

loses in the first instance, by the influence of habit, its consciousness of this continued exertion of the muscles. In the latter case the exercise and consequences of sailing, are so novel and positive, that the mind dwells on them with more attention, until time and habit produce also on the new sailor, the same unconsciousness of the perpetual exertions of the body to preserve its proper position and to prevent falling prostrate with every pitch of the vessel. The same unconsciousness of the operations of the mind and the synchronous action of the muscles of the body, takes place in many of our common actions, which from long practice are so adroitly performed that we frequently are inclined to believe them, and they ordinarily appear to others to be involuntary: Thus for example the successive rapid and almost imperceptible movements of the fingers, and the synchronous actions of the muscles of the tongue, mouth and lips, in playing on the German flute, seem after long practice, to be independent of any act of the mind, since we are inclined to think it cannot produce such vehement and rapid operations. Yet here, each movement of the fingers and every action of the muscles before mentioned, are the effect of a distinct and vivid act of volition.

This continual exercise of the muscles then when a ship is under sail, and which I have before remarked is in some



proves that no danger or injury arises from it. Yet can I hardly believe, that a similar sickness produced by the operation of artificial emeticks, could be excited for any time, without danger. At least few physicians would recommend the experiment, nor would any patients follow such advice, but on the contrary would shrink with fear from so disagreeable a remedy. After the sickness has gone off, persons at sea enjoy excellent health, and have a keen appetite, notwithstanding they are almost without any other exercise than what is derived from the motion of the ship itself. This motion as Gilchrist has properly remarked, although a kind of gestation, performs the

measure performed even during sleep, is one of the most salutary effects of sailing. By means then of this gentle and regular exercise, the circulation of the blood is vigorously promoted through every part of the body, producing so healthy an action in the minute vessels of the surface, that a uniform and copious perspiration is effected. This is carried off as fast as it is exhaled from the surface of the body, by the change of atmosphere and the perpetual succession of its stimulating effects on the skin. Hence it is that there is always so intense and impatient an appetite felt at sea; for the food taken into the system after undergoing the customary alterations, speedily passes off, that is, the liquid portion of it, by perspiration.

office of exercise, and promotes the healthy circulation of the fluids. Besides this, another and natural exercise is accomplished by sailing. For according as the ship rises on the waves and is tossed about, a synchronous motion of the body is required, so that its position and equipoise may be subservient to the vasçillation of the vessel; otherwise no person would be able to move, or scarcely to stand or sit. In order to perform this motion, a moderate, frequent, and scarcely sensible exercise of almost all the muscles of the body is required; and this exercise is performed without any intermission; so that, whenever any one takes a voyage he has the benefit of exercise, or at least of gestation, all the time he lies down in bed, or sleeps. Whatever good therefore is derived from regular moderate and continual exercise, in any disease, is reasonably to be expected from sailing in preference to all other exercises. I am by no means ignorant that this remedy has been ineffectually tried in many cases; but I know that the most advantageous effects have been reaped from it, in others. And if any one will reflect upon the nature of those cases in which it has generally been employed, he will not be at all surprised that it has not always succeeded as might have been wished. For a trial of it is

rarely ever resorted to except in very dangerous, and not uncommonly altogether incurable diseases, as pulmonary consumption for example: indeed it often happens that the patients do not undertake the voyage, until they are in the last stage of the disease, and all medical men know that when this complaint has continued for any length of time, the lungs are so affected as to be almost incurable.<sup>12</sup>

<sup>12</sup> It appears that Dr. Gregory attributes to the effects of exercise alone, all the good derived from sea-voyages, while Dr. Thomas Reid on the contrary attributes their beneficial effects in pulmonary consumption, solely to the action created in the stomach, by the rolling and tossing of the vessel. Indeed in this opinion he is confirmed by the histories related by Gilchrist, who has proved that many persons labouring under a pulmonary affection were cured by short voyages, some of a few hours only, where of course the exercise, however advantageous it may in general be, was not sufficiently long continued to have had any share in these surprising cures. In this place it may not be amiss to mention that a French writer speaking of the effects of sea-voyages and the vomitings they produce, in pulmonary consumption, advances a theory relative to the cause of these vomitings, different from the generally received opinion. His words are as follow: " Je crois que le mal de mer, qui consiste dans des vomissemens qui se continuent pendant



We all know that other kinds of exercise, as for instance, riding on horse-back, or gestation in a carriage, upon which many medical writers, and particularly Sydenham, bestow such commendations, although they have sometimes been very successful, are, nevertheless, often tried in vain. Sailing however possesses a great advantage over all other exercises: that is, that it can frequently be used when every other kind is prohibited on account of the debility of the patient. For this is so gentle and mild, that for the most part the invalid himself is scarcely sensible of it; and the sick can bear it without danger, however feeble they may be. Indeed there are some instances of valetudinarians, already broken down by disease, and so weak, that they were not able to move themselves, who, after being carried on board ship, and having performed a voyage, have recovered

plusieurs jours, et qui même, chez quelques individus, se font sentir pendant tout le trajet, dépend autant de cette exaltation des forces internes qui s'irritent de la présence des fluides qui devaient appartenir à la transpiration cutanée, que de la marche vacillante et du roulis du vaisseau." *Traité sur la Nature et le Traitement de la Phthisie Pulmonaire, par Julien Bonnafox-Demalet, M. D.* p. 169.

both their health and strength.<sup>13</sup> In those cases therefore, where the patients can neither bear riding on horseback nor gestation in a carriage, and when consequently they are incapable of performing journies by land, a voyage certainly ought to be tried. But when the sick are able to travel by land to countries suitable to their condition, it is a matter of doubt whether a voyage should be preferred for this purpose. If it should be long, many inconveniences will arise from it, particularly on account of the food, for some invalids require a diet consisting of milk<sup>14</sup> and fruit,

<sup>13</sup> For a history of many interesting cases of this nature I beg leave to refer the reader who may desire further information on this subject, to the inestimable work of Gilchrist.

<sup>14</sup> With regard to the necessity of milk as an essential constituent of the diet of any invalids whom it may be deemed proper to send to sea for their health, it may not be amiss to remark that as this article was chiefly prescribed in pulmonary consumption by physicians some time back, and as it is now esteemed rather a pernicious than an useful diet in this disease, no solid objection can arise from the want of it on ship-board, to the expediency of taking a voyage. Whether the milk of the ass possesses any real virtues not common to the milk of the cow and other animals, seems, in the opinion of physicians of this day, notwithstanding the ex-

which can scarcely be had during the whole of a long voyage; besides which the privations arising from it affect with dread and disgust, the feelings of men accustomed to the refinements and luxuries of polished life.<sup>15</sup> I would hardly venture to assert

travagant commendations of it by the practitioners who preceded them by a few years, to be very problematical. But it appears to be agreed on all sides, that any kind of milk, taken by a consumptive patient in sufficient quantity to produce any positive effect, will for the most part do harm. Professor Barton in his lectures on the Practice of Physick, speaks of this article in strong terms of disapprobation, so far as regards its employment as a diet in phtthisis; and says he has known many instances of its producing a distressing fulness and oppression of the chest.

<sup>15</sup> I confess this objection to sea voyages arising from the privations that must be endured, strike my mind with peculiar force. Objections predicated upon such grounds are formidable indeed. No human being can be susceptible of stronger emotions of disgust and wearisomeness of life, than I have felt at sea, from the necessity of encountering the privations of retirement, of peace, of social felicity, for months at a time together. Such was the gloom and despondency with which I was constantly affected during the prevalence of bad weather, that I was always firmly convinced if ever I should have fallen ill at sea, that the debili-

that the other advantages derived from sailing can compensate for this inconvenience; nor will I deny

tating effect of a dejected mind, would inevitably have prevented my recovery. Knowing then that such feelings have existed in others, and having experienced them in myself, I think we should do well to deliberate seriously and long, on the temper and disposition of our patients, before we venture to prescribe a sea voyage for their relief. There are unaccountable repugnancies to the turbulent vexations of a sea-life, as well as lively disgusts at the inevitable want of cleanliness that depends on it, which many men feel acutely. Would it not be a precarious practice to send such to sea? And if the stronger sex be frequently the victims of such deep-rooted and unconquerable versions, how much more frequently must we not expect to find the fragile and delicate female, accustomed in her indisposition to the so-lacing comforts derived from the society of her friends, perhaps her children: as well as to the kind solicitude of an attentive nurse—loathing with painful disgust the very idea of existence, while the distressing sea-sickness deprives her of energy, of spirits, and of the attention of her attendants whom a similar sickness perhaps renders nearly as much in want of assistance as herself? Nor can I subscribe to the beneficial effect attributed by some to the transitions of the feelings from hope to fear and vice versa, so justly said to be common at sea. Dr. Gilchrist in his work on sea-voyages, (p. 67.) says, “living at sea must

that a journey on land, performed in a carriage, produces highly beneficial effects, resembling those

be considered as having a mighty influence on the mind, which, by consent, will powerfully affect the body. In sailing there is a strange mixture of passions; and these are sometimes in extremes. Sea-faring people are frequently agitated between hope and fear; are sometimes merry, sometimes sad; exulting with joy when safe, and at rest; and in danger thrown into the utmost despair. Such variations and sudden transitions of passions, are capable of removing the most inveterate diseases, and such as are not curable by any other method."\* I will venture to assert that the learned author whom I have just quoted, never practised medicine extensively on ship-board at sea. I have never failed to observe the prejudicial nay, I may say in some instances, the fatal effects on my patients at sea of the violent and sudden ebullitions of hope succeeded by dejection and despair, so frequently produced from the interest almost all persons take in the safety and comfort of the ship and the state of the weather. I have known a paroxysm of an intermittent accelerated by a "head-wind" being announced to the unfortunate subject of the disease, whose hopes of happiness, of

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\* Verum gestatio per pelagus vehementissima est, et mutationes plurimas, et maximas facit Nimirum cum anima mixtos affectus habeat, ex tristitia et spe, timore et periculo; modo gaudentibus et lætis, modo in agone existentibus navigantibus. Omnia hæc composita sufficientem vim habent omnem veterem morbum exigendi, et e corpore excludendi."—*Artius Medicin. contract. tetrab. prim. serm. 3. cap. 6.*

too, that arise from sailing. Those therefore who are in affluent circumstances, and who retain strength

health, of joy, depended on the speedy arrival of the vessel "at the haven where she would be." Can the debilitating effect of depressing emotions be less active at sea than on land, under similar circumstances? Or is the excitability of the system less alive to impressions there? Surely not. Since then these vicissitudes in feeling are found to be so prejudicial to the morbid constitution on land, we may naturally conclude that they exert no less unwholesome effects on the debile system at sea. I have been much at sea, and am a strong advocate for the use of sea-voyages in medicine. I *know* their efficacy, for I have been an eye-witness to their power in relieving those who were beyond the reach of medicine. I have seen the last scintillating light of life, fanned into a bright and burning flame, by means of this mighty influence; but I would yet discourage the too hasty recourse to this remedy. I *know* it has done good, I *believe* it may do harm. In speaking as I have done respecting the dejection of mind that a sea-voyage sometimes produces, I am not ignorant that highly respectable, nay celebrated authors have maintained a contrary opinion. With deference I have ventured to oppose the powerful current that flows against me; and I can only say that what I have advanced is grounded upon a strict and unwearied attention to the effects of the sea life upon all those with whom from time to time I have sailed. I have been for months together at sea



enough for the purpose, should pursue the more agreeable path, and travel by land. To others whose limited pecuniary resources, and completely enervated constitutions deprive them of that choice, a remedy not less efficacious is held forth, by means of a sea-voyage.

Lastly, a question yet remains: when it is deemed convèient to make a change of climate, what places are the most proper for the purpose? With regard to the advantages or disadvantages of different places, I shall not venture to state any thing positively, for in fact I am very little conversant in these things. However, this much I may say with certainty, that a clear, dry, and at least in most cases, an uniform climate, is required. The southern countries of Europe,—Spain, the greater part of Italy, the southern parts of France, enjoy such a climate; so also does Madeira,<sup>16</sup> and the Bermuda Islands. It is my intention in a future part

with four hundred and once with near five hundred souls. Among such a number I could not fail of making many observations, and what I have advanced is the result of them.

<sup>16</sup> It was formerly very common for physicians who advised a change of climate for the purpose of relieving their



of this work, to say a few words on the use which the physician can make even of the hottest climates, with a view to their remediate effects in diseases.

These things being premised, I may now treat more in detail of certain disorders arising from our

consumptive patients, to send them to the island of Madeira. The high opinion entertained of the salubrity of that place, will appear from the following passage from Dr. Fothergill's observations on consumptions.\* "Of all the places we are acquainted with, perhaps the island of Madeira enjoys the most equal temperature; but the voyage and other circumstances attending it, afford very formidable objections;" and Dr. Thomas Reid, in the first edition of his valuable work on pulmonary consumption, recommends Madeira in preference to Lisbon, "as being at a greater distance, more to the southward, and the air, from its insular situation, purer and infinitely more healthy." In the second edition of his work, however, Dr. Reid tells us that the recommendation of Madeira as above stated, was made on the authority of a medical friend who had sent phthisical patients to that island with success, as well as in consequence of what Dr. Fothergill had said respecting it; but tells us that having subsequently made some inquiries on the subject, he "was not a little surprised to hear, that it (the island of Madeira) was believ-

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\* Med. Obser. and Inquir. Vol. V. p. 368. Ann. 1776.

climate. It is by no means my intention to descant upon all the diseases emanating from this source. It

ed to be particularly prejudicial to the consumptive." He quotes a letter from Dr. Gordon of Madeira, dated 28th April, 1784, in answer to his inquiries, with a view to ascertain the truth.\* Since this place still retains the reputation of being peculiarly suitable for consumptive patients, with some physicians: and since to my knowledge a few patients† have been sent from this country to that island, who died there, it may not be amiss to publish this extract, for the information of those who may be disposed to follow the same practice. Such observations as this letter contains, coming as they do from a physician residing in the island, a physician too of reputation, and enjoying the confidence of some of the first medical men of London at that time: must be read with interest, and cannot fail to receive the attention they merit.

“Sir John Pringle, and some others of my medical acquaintance in London, did me the honour about eight or nine years ago, to send some of their consumptive patients under my care, of which few recovered; and I was induced to discourage them from sending any more to our island, especially as the generality of these cases are in the last

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\* Reid on Consumption. 2d Edit. p. 271.

† Two from Philadelphia, and one from Virginia

will be sufficient to take into consideration those in which a change of climate avails most, and the danger and inconvenience of which particularly demand the assistance of this remedy.

The diseases which may be ascribed to the effects of our climate, vary according to the age of the per-

stage of the disease before they leave Britain. And unless they are particularly recommended to some British merchant's house, they have no alternative, but to take up their quarters in a publick-house, which are very indifferent in this place, and by no means calculated for their reception. No pecuniary consideration whatever will induce the natives to accommodate phthysical patients. Our provisions in general are not bad, though it is often difficult to procure proper diet for the valetudinarians, by having no kind of market established. Our roads all over the island are very indifferent, and not shaded. The society is very good for those in health. A great scarcity of asses milk, and no such thing as nurses, or proper people to attend the sick. Add to all these objections, I am of opinion, that *our air is too fine and penetrating for hectic complaints*, and should imagine the south of France a much better climate, or even the Highlands in some of our West India isles. Am sorry the situation of Madeira will not permit me to give you better encouragement on the propriety of sending consumptive patients here."

son affected. Diseases of the breast, principally hæmoptysis, and pulmonary consumption which often supervenes upon it, occur for the most part in youth. In more advanced age these complaints are rarely observed, when various affections of the abdominal viscera, and especially of the stomach, succeed. Gout and hypochondriasis are frequently produced by these affections, and sometimes they are found combined with them. In the decline of life when all the powers of the system have become degenerated, the intemperate climate falls upon those already debilitated and nearly worn out by old age,—racks every part of the system with innumerable pains, embitters life, and accelerates the approach of death. It is my intention in the following pages to observe the natural order of diseases; and therefore, I ought to begin with pulmonary consumption, which, for the most part, occurs in youth.

## SECTION II.

Of the nature and symptoms of Pulmonary Consumption, and its similarity or identity with Scrophula.—Of the different notions of physicians respecting the curableness and incurableness of genuine Phthisis.—Of the effects of Wounds and other Injuries of the Lungs, on that Viscus.—Of the remote and proximate causes of Consumption, and the reasons that may be deduced from them, in favour of a change of Climate upon the Disease.—Of the curative effects of Travelling, Riding on Horseback and Sea-Voyages.

**THERE** is perhaps no disease generated in this island, whether we behold its devastations or those subjected to its ravages, more deserving of attention than pulmonary consumption. If we may credit the London bills of mortality, a fourth part of our population is carried off by consumption.<sup>17</sup> This prodigious

<sup>17</sup> “ In the London bills of mortality, the number said to die of consumptions, is generally between four and five thousand annually; exclusive of those not buried in parochial churchyards, and in every other part of the kingdom. Though the

destruction of the human race falls especially upon the youth, often on the most beautiful, particularly of

manner of forming these registers, is liable to such uncertainty, as calls loudly for reformation; and the term consumption is applied to many different diseases; yet it will serve to demonstrate, that a great number yearly die of this disease.

“By a register of the parish of Holycross in Salop, from the year 1770 to 1780, kept by the Rev. Mr. William Gorsuch, it appears, that three hundred and eleven died in the ten years by disease and casualties; out of which sixty-two died of consumption; sixty-four of a natural decay, without any apparent distemper, and thirteen by accidents. So that the deaths by consumption are somewhat more than one in four. By an actual survey made in the year 1780, the inhabitants were eleven hundred and thirteen. *Philosoph. Trans. vol. 72, for 1782.*”\*

It will appear from the above account of the bills of mortality of the city of London, that the fatality of phthisis is prodigiously extensive; and from what has been advanced in the text, that the disease is endemial to the climate of Great Britain. Now it is a fact that the prevalence and fatality of

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\* Reid on Consumption, p. vii.

the fair sex, and on those who are conspicuous for wit and the elegance of their minds and persons. Should

consumption in some portions of the United States is no less conspicuous and demonstrable than in England. Volney observes that "all travellers in the United States have spoken of the frequency of this fatal disease, which cuts off chiefly young married women and girls in the flower of youth and beauty. It is more common in New England and the middle states, than in the states to the south-west."\*

Dr. Spalding, in his bills of mortality drawn up at Portsmouth in New Hampshire, has proved, that as great a number of persons die of consumption, in a given time and in a given population, in the New England states, as die from malignant fevers in the southern states of Carolinas and Georgia. What then is the probable cause of this great prevalence of pulmonary consumption in these states? I have before (Note 2) hinted at the similarity of our climate to that of Great Britain, and said that a corresponding similitude in the constitution of the endemial diseases might reasonably be expected to prevail. Let us now take a more extensive view of the nature of this climate with regard to the probable light it may throw on the cause of the disease as above stated. And first let me remark that the unhealthiness of the countries adjacent to our lakes, as well as

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\* Volney's View of the Climate and Soil of the United States, p. 280.



any one however be disposed to doubt that such a deplorable loss can arise from the ravages of a single

of some of our eastern sea ports, lying exposed to the sea blasts, seems to be in opposition to the notion of Sir John Pringle, who conjectured that "great bodies of water, such as seas and lakes, are conducive to the health of animals by purifying and cleansing the air contaminated by their breathing in it."\*

There is no doubt that the different complexion of the diseases of the New England states, from those of the southern, is owing chiefly to the rigour of the climate, accompanied by rapid and unexpected changes of the weather. These changes of course are ushered in by variations in the winds. In the state of Vermont for example they are generally from the south-west to the north-east, and the most prevalent winds, according to Williams,† are either "parallel with or perpendicular to this course." He further states that there the west and north-west winds are dry, cooling and elastick, while those from the south and south-west are more warm, moist and relaxing. In the sudden changes then of winds possessing such different properties, we will find a fruitful source of colds and catarrhs, the forerunners of consumption.

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\* Anniversary Discourse before the Royal Society, in the year 1773.

† History of Vermont, p. 48.

disease, let him inspect the bills of mortality of the city of London.<sup>4</sup> Even supposing their calculations

What has been just said respecting the climate and winds of the state of Vermont, is true, generally, of all the northern and eastern states. Yet so versatile is the constitution of the climate of this country, that it is almost impossible to define, by any positive language, its general character. This diversity is not confined to any particular state, or tract of country, but is frequently evidenced in different parts of the same state, and in the same latitude. To understand then thoroughly the nature of the American climate, one ought to be able to view it in all its multifarious changes throughout the continent. In general it has been remarked that in our winters, when a steady cold prevailed from Christmas till March, with much snow and little thaw, and uniformly cold elastic winds: but little tendency to disease was observable; and the diseases occurring during such a state of the weather, were manageable. In a variable winter however, when a warm mid-day sun and rapid thaws are generally succeeded by the nipping frosts of night, and particularly when much rain falls: colds are very rife, and consequently consumptions follow. The greatest danger in this climate however, is to be feared in the months of spring. This is a deceitful season, and never fails to make unperceived and deadly inroads on the constitutions of persons predisposed to phthisical complaints. Volney has asserted that "throughout the continent

are double what they should be, how extensive and indeed lamentable a destruction of the human race,

of North America, there is *no spring!*”\* This assertion, novel as it may at first sight seem to be, is really well founded. There is no part of the United States north of the state of Maryland, where three hours fair weather may be depended on, in the months of March and April; and though May† is less variable, yet its excessive heats, and sometimes unseasonable frosts, render it so unpleasant a month generally, that it can hardly be considered as spring weather. Comparatively with Europe, according to M. Volney,‡ there falls “more rain in the United States, generally speaking, in fewer days, and there are fewer cloudy days, more fair days,§

\* On the Climate and Soil of the United States, page 150.

† “The month of May, 1786, will long be remembered, for having furnished a very uncommon instance of the absence of the sun for fourteen days, and of constant damp or rainy weather.” Rush’s Account of the Climate of Pennsylvania.

‡ View of the Climate and Soil of the United States, p. 241, 242, 243.

§ “The climate of much the greater portion of the United States furnishes great degrees of heat and cold, in their respective seasons; but neither of the extremes is of long continuance. Our climate is also very variable, the temperature of the atmosphere being liable to great and sudden vicissitudes. Nevertheless, taking the whole routine of the seasons, we enjoy a large proportion of fine and moderate weather, *with more days of sun-shine and serene sky*, than, perhaps, any part of Europe exhibits.”—Observations on the duration of Human Life, &c., in a letter from Wm. Barton, Esq., to Dr. Ritzenhouse. Trans. Am. Phil. Soc. Vol. 3. p. 51, paper No. vii.

must we not attribute to pulmonary consumption! If it was worth the trouble of an accurate computation,

and more evaporation.”\* It is owing to this powerful evaporation in the United States, that we have such heavy dews, which are unknown in the temperate climates of Europe. The reason of this rapid evaporation M. Volney believes is “because the winds are pure, in consequence of the general plainness of the surface, and because one of them, the north-west, which is extremely dry, prevails for two-fifths of the year.”† Hence we have another cause for the prevalence of

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* Mr. J. (now General) Williams* found by a series of experiments and researches that the mean quantity of evaporation, at Cambridge, near Boston, for a term of seven years, was	Inches.
	- - - 56
While in seven German and Italian cities, on a mean of twenty years, it was only	- - - - - 49
Which leaves a difference of	- - - - - 7

Yet the cities of Italy are in a latitude much more favourable to evaporation than the vicinity of Boston, adjacent to the Atlantic Ocean.

	<i>Fair Days.</i>
In one year there were at Salem	- - - - - 173
At twenty cities in Europe	- - - - - 64
	<i>Cloudy Days.</i>
At these same twenty cities there were in 1785	- - - - - 113
At Cambridge, near Boston	- - - - - 69
At Salem, taking the medium of seven years	- - - - - 90

† View of the Climate and Soil of the United States, p. 244.

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\* Transactions of the American Phil. Soc.

it would not be in the least difficult to show, that twenty-five thousand men are annually destroyed in

consumption. The warm mid-day suns produce copious perspiration in the spring, and the sudden evaporation of it produces catarrhs. The air of America abounds more in electric fluid than that of Europe; this fact, which evidences an excessive dryness of the air, and which really is only observable during the continuance of the dry and healthy winds, is remarkably demonstrated in the appearance of the silk tassels worn on boots, especially when they come frequently in contact with the silk linings of our surtouts. It is constantly observed too, flying off in sparks, when we pull off worsted or silk stockings.

When the atmosphere is thus surcharged with electric fluid, it is highly salutary. Every degree of diminution in the quantity of this fluid, is an evidence of an increased degree of dampness in the air, and consequently, argues a less wholesome quality in it. The changes from this state of air to excessive humidity, are very common, and not unfrequently very sudden. Hence a reason why we should guard against the colds consequent to them, by changing or increasing the quantity of our clothing. The female portion of the population of the middle and northern states, is said to be more subject to consumption than the male. If this be actually the case, and I am inclined to believe it is, we need look no further for the cause, than the recklessness with

Great Britain by this disease. The celebrated Sydenham advanced an opinion respecting this malady, not

which the women, and young girls, particularly those accustomed to move in the gay circles of high life, indulge themselves in imprudent changes of clothing. This is at all times ill-proportioned to the severity of our climate; and when the little degree of comfort and protection it is capable of affording, is wantonly sacrificed at the shrine of fashion, need we be surprised to hear the reiterated complaints of colds they make; or can we doubt the assertion, that this sex is peculiarly liable to phthisical complaints. This last circumstance is said by M. Volney to be owing to their "light and airy dress." He says that in the course of two winters, he observed a great number of people of fashion had four or five relapses, "for the rich are particularly liable to colds."\* "In the cities on the coast," he continues, "where the people are eager to imitate Europeans, these colds have other causes in overheated apartments, balls, tea-parties, and feather beds; sometimes indeed in the German fashion, that is, a feather bed to sleep on, and another as a coverlid."—The circumstance above stated, respecting the greater prevalence of colds among people of fashion, (for such I presume M. Volney alludes to when he says "the rich,") is a notorious fact; and among these, there is no

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\* Volney's View, &c. p. 279 and 280.



widely differing from this; namely, that two-thirds of those that fall victims to chronick diseases, are

doubt that the women are more frequently afflicted than the men. It is a fact as notorious too, that it is a common practice among the young girls of this and other cities, to throw off a flannel garment which they have worn all day in the house, and in a warm room, when they go to a dance or tea-party in the evening. This circumstance\* of itself would be a fruitful source of consumption, in such a climate as this: but when we add to it the thin and scanty dress which supplies its place,—the imprudent exposure to the cold air while in profuse perspiration after dancing, and what has equally an injurious effect, the thoughtlessness of eating ice-creams while overheated by this violent exercise,—ought we not rather to be surprised that consumption does not sweep away the fairest portion of our population entirely, than doubt the verity of the assertion: that women and young girls in the United States are more liable to consumptions and colds, than any other persons? If then this change of clothing, this imprudent exposure while so thinly clad: and

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\* “ A learned author supposes the imprudent changing of garment destroys more than the plague, famine, or the sword; one would think the ladies dressed in those days as now; wrapping themselves up in the day, and exposing their persons to the cold, damp night-air.”—Thos. Reid on Consumption, p. 294.



carried off by pulmonary consumption. In another place he asserts that chronick diseases destroy almost

this more than imprudent exposure while overheated by warm rooms and dancing, are sufficient to produce such evils in this delicate sex—what fatal danger must they not expose themselves to, by encountering all these hazardous circumstances at particular times, when the constitutional economy requires infinitely more care than during the interval of these periods: and when the system, even of the most robust female, is always more or less debilitated and disordered!

From the foregoing observations therefore, it follows: that the cause of the prevalence of consumption in some portions of the United States is to be found in the inconstant state of the climate as demonstrated in the sudden and excessive transitions of the weather;\* the great evaporation and heavy

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\* The range of the thermometer in these states, is not unfrequently from 80° of Fahrenheit in summer to zero, or one or two degrees below it, in winter. And in the present month, (Feb. 1815,) the mercury stood at from 5° to 16° below zero of Fahrenheit in different parts of the United States. My father mentions, that “ Mr. Rittenhouse had noticed, that, at his Norriton observatory, (in lat. 40° 9' 31" N.) the mercury in Fahrenheit's thermometer, not exposed to the sun-shine, but open to the air, was at 94° 30', on the 5th of July, 1769; 'which,' says he, 'was the greatest height it had ever been observed to rise to, at that place.' But the writer is informed by a judicious and attentive observer, that at Lancaster, Pennsylvania, which is in lat. 40° 2' 39" N. (the long. of this borough-town is 5° 1' 4" W. from Greenw.) the mercury rose by Fahrenheit's scale, on the 7th of July, 1811, to 97° 30'. Admitting this to be correct, if 1° 30' be then deducted, for the extra heat of

a third part of mankind. From these proportions as data, it would appear that pulmonary consumption destroys forty thousand men and more, annually in this island. There is however, no occasion to descant upon the devastations of this malady. For there are few of us, who have not to lament the death of acquaintances,

dews which follow it; the frequency of checked perspiration by cold winds after rapid thaws of snow; the disproportioned quantity of clothing at all times, particularly of the females, to the rigour of the climate, and the imprudent change of it during the winter season; as well as the careless exposure of the system to the intemperance of the spring weather, by the premature alteration of winter dress, particularly the imprudent change of flannel garments. Among these causes, it is evident that the physical constitution of the country has a most powerful operation, yet it is equally plain that the defects of climate are assisted in their unhealthy consequences, by the artificial deficiencies in clothing. This proves that with greater attention to the state of the weather, and more care in adapting the the covering of our bodies, to its inclemencies and its caprices: the prevalence of this destructive disease would be infinitely diminished, and in all probability its violence and fatality lessened.

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so large a town as Lancaster in comparison with a country situation, there is in this case the great range of  $118^{\circ}$  by Fahrenheit's scale, for the extremes of heat and cold in Pennsylvania.<sup>33</sup>—Barton's *Memoirs of Rittenhouse*, note, p. 139.

associates, or friends, who have been snatched from us by this destructive complaint. Relentless, cruel and unfeeling—this deadly consumer of human health, glutting itself perpetually upon the young and delicate, fills our country with sorrow and devastation!

Pulmonary consumption is esteemed an endemial disease in our climate, and not improperly; for perhaps there is no country on the globe in which it produces such fatality. All physicians confess that the most efficient remedies are administered in this disease in vain, at least, in the generality of cases; and that when it is of long standing, a radical cure must be despaired of. The cure even of incipient phthisis, is a precarious and difficult undertaking. No remedy succeeds better in this disease than a change of climate, by means of a seasonable journey into warm countries. Whatever therefore seems to promise any assistance in so dangerous a malady, is worthy of the highest attention. Its mode of action is now to be investigated. By an attention to the symptoms, and to the remote and proximate causes of the disease, as well as from analogy of those things which have the effect of yielding succour to the ma-

lady, we may learn how that remedy operates beneficially.

Pulmonary consumption may be known for the most part, by the following symptoms: a slow emaciation of the whole body, accompanied with hectic fever; a sense of weight or constriction, or pain, in the breast, with difficulty of breathing; a frequent and troublesome cough, which in the beginning is dry, but after the disease has progressed, generally accompanied with purulent spitting. The symptoms which denote incipient consumption, vary according to the causes which produce it, as for instance, pleurisy, catarrh, hæmoptysis, &c. The proximate cause of this disease is well known. Dissections of the bodies of persons who have died of consumption, have almost always exhibited tubercles, vomicas and ulcerations of the lungs, by which sometimes nearly the whole of that viscus is consumed. I say that these morbid phænomena will *almost* always occur, for I would not venture to assert that they will *always* be found. There are many physicians of no little reputation, who strenuously contend, that sometimes neither an ulcer nor any other visible injury is to be discovered in the lungs of those who have had co-

pious purulent spitting, and other symptoms of consumption, and who had evidently died of this disease. It is agreed on all hands however, that instances of this kind are very rare, while it is generally allowed that true consumption arises from an ulcer, or rather ulcers in the lungs. The dissections indeed of dead bodies satisfactorily demonstrate, that not only a single ulcer or tubercle, but sometimes congregations of them had produced the disease, and that these had become inflamed and had suppurated. The proximate cause therefore being known, the curative indication would seem to consist in dissipating the tubercles, or if they shall have already passed into suppuration, to heal the ulceration in the first place. This effect however is to be accomplished by the healing powers of nature, and not by the assistance of physicians; and I must confess that in this stage of the disease I see nothing which justifies the expectation of any benefit being likely to result from a change of climate. If the general habit of body is sound, ulcers in any other part are usually healed with facility by the mere efforts of nature; and in such cases physicians might easily retard, though they could scarcely promote, the cure. For I do not know any remedies which, by any specifick power, can produce

that healing process. It is well known, that many remedies which have been administered with that intention, have had altogether a contrary effect, and not only did not do any good, but often proved very injurious,—such as natural and artificial balsams: and these are now rarely employed.

Yet there are certain indolent ulcers, which require the assistance of the physician and the surgeon; and many ulcers that do not heal spontaneously, are easily cured by the administration of proper remedies. By analogy, various remedies have been tried in depraved and obstinate ulcers, consuming the lungs. Of the manner in which the remedies that assist the cure of external ulcers act, it is easy to give the rationale. They divide themselves into two classes:—into external and local, which are applied immediately to the ulcer, and affect that only: and into internal and general, which act upon the whole system, and do good, not only to the ulcer, but also remove any taint pervading the general system. The first are of the greatest utility in curing that particular state of ulcers, which from experience we know retards their cure. As for example, incisions or escharoticks for destroying fungous flesh, or removing callous parts, or inducing a new and favourable sup-



puration, which are evidently required in healing an ulcer. But it is impracticable to administer remedies of this kind in consumption; and even if they could be employed, I know of no symptom by which such a condition of the ulcers could be ascertained, so that either one or other of these remedies could be pointed out as necessary.

The other class of remedies (to wit, the general and internal,) exert scarcely less power in curing those ulcers which arise from some general taint. Such are the syphilitick or scorbutick ulcers, which for the most part we may vainly expect to heal by purely local means, unless, at the same time, internal and general remedies adapted to the cure of those diseases, are carefully administered. By analogy, therefore, in this malady, arising from ulcers difficult to heal, remedies should be administered for curing that taint, of whatever sort it may be, which impedes the curing of such ulcers. In order properly to accomplish this purpose, it is necessary to ascertain the remote causes of the disease. It is not necessary to expatiate largely on the subject, to show that consumption does not, at least generally, arise from a mere injury or even from suppuration of the lungs,



unless some morbid predisposition or taint shall previously have existed in that viscus, or in the general system. What that taint is, will hereafter be investigated. It is known, however, that this disease generally supervenes upon hæmoptysis; so that whenever a young person is affected with a spitting of blood from the lungs, his case is hopeless. Sometimes also, consumption follows a badly treated peripneumony or pleurisy which has terminated in suppuration. Sometimes too, though rarely, it arises from some great external violence, inflicted on the breast or the lungs themselves. These things having been observed to take place, it has been hastily concluded, that an injury and a certain depraved suppuration of the lungs, as well as an incurable ulcer, and consequently a mortal consumption, were produced. Physicians have referred the cause of this injury, to the nature and construction of the lungs, and their office. In support of this opinion they have remarked, that the blood flows with great force through the lungs, and that they themselves are agitated by a perpetual motion, namely of respiration, which by alternately weakening and irritating its parts, was believed to impede the cure of a wound. And finally they have adduced another reason from the analogy of external

wounds, which are difficultly cured when exposed to the air. Now the air, say they, is received into all parts of the lungs; if therefore there be any ulcers there, they are necessarily exposed continually to it. But all these circumstances are not sufficient to solve the difficulty. The motion of the individual parts of the lungs is always inconsiderable, and except in a full inspiration, scarcely sensible. It seems hardly probable, therefore, that such injury should arise from this cause. And no effect should be attributed to the admission of air; for, although it is received into the lungs, it never comes in immediate contact with them, since the internal surface of this viscus is always lubricated with mucus, which would naturally defend any wound from the air. Besides, we know that the external wounds of dogs, and many other animals, heal after being licked; for this very reason, that the saliva and mucus mixed with it, sufficiently defend the wounds from the action of the air. All arguments therefore, tending to show that an injury of the lungs ought to produce consumption, go for nothing. And besides, experience proves that the fact is not so. For there are innumerable examples of cures, where, after the most manifest injuries, nay, even suppuration, of the

lungs, no consumption ensued.<sup>18</sup> Many persons also have been affected with hæmoptysis, without con-

<sup>18</sup> A very remarkable instance of entire recovery from a wound into the cavity of the lungs, is related by Dr. May,\* of Plymouth, in England. The case was that of a British officer, who was wounded in a duel. The pistol ball passed in the direction of the right lobe of the lungs, through which it was supposed to have perforated. Considerable external hæmorrhage and bloody expectoration with difficulty of breathing came on; these were followed by a cough and symptoms of violent inflammation. The antiphlogistick plan of treatment was pursued. Blood was discharged for many days by coughing, and purulent expectoration supervened. Symptoms of convalescence soon after appeared, and the patient in a short time entirely recovered. Dr. May says he was indebted for this fact to Mr. Adams, of Likeard, an ingenious surgeon of the navy, who was an eye witness of the circumstance. That the ball actually perforated the lungs in this case, was proved by a circumstance which subsequently occurred. A piece of woollen cloth, enveloped in a clot of blood and pus, was brought up by coughing. That consumption did not follow seems plain, but in all likelihood the patient owed his escape from it, to a circumstance which, though no mention is made of it, in all human probability really existed: I mean a sound and robust constitution, unblemished by any latent pulmonary taint. I am the more inclined to this opinion, from having had

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\* Essay on Pulmonary Consumption, by Wm. May, M. D. Introd. p. xiii.

sumption supervening. Many after an attack of badly treated peripneumony, have had an extensive suppu-

under my own care a case strikingly similar, as far as respects the nature of the wound, though followed by very dissimilar results. As this kind of wounds of the lungs is always interesting, I will briefly relate the instance I allude to, which I the more willingly do, as perhaps I shall never have another fit opportunity of making it publick. While I was surgeon of the frigate United States, in the year 1809, being on shore at Norfolk, where the ship was then stationed, I was called to visit midshipman L——h, whom I had but an hour before seen on board, in perfect health. He was so unfortunate as to have been under the necessity of meeting a brother officer in the field. His antagonist's ball (being one of the largest pistol-size, since the arms used were ship's arms) had entered the left side of the breast and had passed entirely out under the inferiour edge of the scapula; its direction being obliquely upwards and backwards from the point where the ball entered to the place of its exit. I found him bleeding pretty largely from the external wound in the breast, and copiously expectorating blood, likewise coughing it up at short intervals, in large clots. He was labouring under great difficulty of respiration, and at times seemed nearly to be suffocated with the rapid and extensive internal hæmorrhage. His countenance had a ghastly paleness, which, together with the deadly hue of his lips, and other symptoms, seemed to indicate that he was fast approaching dissolution. It is needless to go into the detail of the treatment pursued. Suffice it to say,

ration in the lungs, which being entirely rejected by spitting, was soon cured. And finally, examples

that it was rigorously calculated to allay the great irritation of the system while it continued, and subsequently modified and altered as the exigencies of the case required. In a short time, extensive suppuration, with a constant cough came on, and continued for a long time to weaken the patient. Hectick fever with colliquative night sweats now succeeded, and seemed to threaten a fatal termination to the life of this interesting youth. He however survived the accident, a circumstance chiefly owing to the kind and close attention of his brother officers of the ship, whom commodore Decatur permitted to be as much on shore to nurse and watch with him, as the duty of the ship could admit of: an office, as he was much beloved, that they all cheerfully performed, and in which they showed their usefulness by a prompt and correct execution of the directions of his medical attendants. In the month of February, 1810, the United States proceeded to sea, and Mr. L. was sent to the Marine Hospital under the care of Dr. Barraud, who showed him every possible attention and kindness. In the month of April, 1812, while visiting the navy-yard at Washington, I accidentally met him. He had been with his friends in the country, and his general health was considerably mended, though it was plain to me that he laboured under a pulmonary affection. He is still living, I believe, though I fear he will never shake off the disastrous consequences of his accident. His stature, the confor-



daily occur where the lungs are injured by external violence, or wounded, and yet consumption rarely arises from these causes. If the wound be extensive, sudden death entirely prevents all danger of consumption: if it be slight, it is soon healed. Indeed, there is one instance of a wound in the lungs proving

mation of his chest, his voice, his complexion, even in health, strongly indicated I think, a predisposition to phthisis. Consequently no one will be surprised to hear that it supervened eventually. This might with propriety be classed with the phthisis ab vulnere of Sauvage, and the "phthisie par blessure de poitrine" of Bonnafox Demalet.\* Drs. Barraud, Selden and Hansford, physicians of Norfolk, saw this gentleman with me in the first instance: he had then been wounded about half or three quarters of an hour. The two first and myself continued to see him for two weeks or more, and the latter part of the time Dr. Selden and myself continued in attendance together. The case of this young man is well known to Dr. Gerard Dayers, now surgeon of the Congress frigate, and Dr. William Clarke, at present surgeon of the Wasp sloop of war: both at that period my mates on board the United States.

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\* This nosological writer places this variety of consumption, as the sixth species of the third genus of the disease. His first genus contains four species; his second, ten; his third, six.—*Vide* "Traite sur la nature et le traitement de la Phthisie Pulmonaire," by this author.

a cure instead of the cause, of phthisis. A military commander who was believed to labour under a pulmonary consumption, was wounded in an engagement, the ball having passed through his lungs. This remedy, a harsh and dangerous one it must be confessed, succeeded most happily; and the man lived many years afterwards, and is yet living, free from every consumptive symptom. Consequently, in order to cure a suppuration of the lungs, there is no necessity for the use of remedies which promote directly the healing of the ulcer itself, if any there be, endowed with such a virtue. And we see nothing in an ulcer of this nature, requiring a change of climate. The assistance of the physician is no further necessary, than in seeing that the morbid taint which renders the ulcer incurable, whether affecting the lungs only, or contaminating the general system, be first removed: when that is banished, the ulcer will be easily healed. For the healing powers of nature alone effect the cure of an ulcer in the lungs, as in other parts of the body, when every obstacle is removed.

All these facts plainly prove, if I am not mistaken, that a simple injury of the lungs, and a rupture of their vessels, can never induce an incurable ulcer



and pulmonary consumption, unless the lungs themselves or the general habit, have previously become contaminated by some taint. But the nature of this predisposing vice can only be ascertained from observations of the causes of the disease. Experience therefore teaches us, that those persons will be most liable to consumption, who have received an hereditary taint from their parents; who are between the age of puberty and thirty-five years; who have a delicate and weak habit, a contracted and narrow chest, a deformed spine, and shoulders projecting disproportionably beyond the arms; who have a white and smooth skin and delicate complexion, long neck, weak voice, and frequent hoarseness from slight causes, together with a sanguineous, phlegmatick temperament: and finally, those in whom there is a scrofulous and hæmorrhagick disposition, and who are very liable to catarrhs. These signs, indeed, give evidence of the weak habit of the whole system: but especially denote a mal-conformation of the lungs. The chief and most frequent causes of consumption, however, if I am not mistaken, may be reduced to three; to wit: a scrofulous disposition, hæmoptysis, and catarrh. From whichever of these the disease

arises, I shall endeavour to show, that a change of climate promises great assistance.

All physicians know that this complaint very frequently arises from a scrofulous disposition. The illustrious Mead advanced that opinion many years ago. Indeed, we owe to Sydenham a memorable remark, which seems to have suggested this; namely, that in some consumptive persons who had been cured by riding on horseback, glandular tumours in the neck which bore a strong resemblance to scrofulous swellings, have been observed after that disease had left them. No doubt, however, remains on this subject among physicians of the present day. Observations have satisfactorily ascertained the fact, that persons of scrofulous habit are more subject to consumption than others, and that the greatest part of consumptive people evidently have this disposition. There are some physicians too, of no little reputation, who, out of every hundred patients carried off by consumption, reckon the proportion of ninety at least, to be scrofulous. Besides, there is certainly a great similarity and affinity between the tubercles and consumptive ulcers of the lungs, and scrofulous tumours and abscesses in other parts of the body.

They also have the same external, and, if they be cut by the knife, the same internal appearance; the same thickness and hardness. In the same way they often increase by degrees from a small beginning to a large tumour, and generally without much pain or inconvenience; they suppurate tardily and with difficulty, and never pass into a healthy suppuration, but are resolved into offensive and almost incurable ulcers. Both appear at the same seasons of the year, that is, in winter and the spring; upon the approach of summer they are mitigated or discussed; and on the return of spring both often reappear. And lastly, in dissecting the dead bodies of those who evidently died of scrofula, scrofulous tumours in all parts of the bodies, and tubercles in the lungs of the same kind, have not unfrequently been found; this it has happened to me to see twice or thrice. From all these things it is sufficiently evident, that consumption of the lungs often arises from a scrofulous disposition, and that it is a true scrofulous disease. Wherefore, when consumption occurs in those, who are either manifestly scrofulous themselves, or born of scrofulous parents, it is generally to be attributed to this cause.

Perhaps some may believe that it would not avail much in this complaint, that its cause should be established by the most unequivocal symptoms. For scarcely any disease is more obscure or more difficultly cured than scrofula, even when it affects external parts, to which remedies adapted to the disorder, can be directly applied. Indeed I honestly confess that almost all remedies are for the most part exhibited in vain, and from their effects I have never been able to collect any thing that argued a probable advantage from a change of climate. Neither can much be gathered from the causes, for nothing is more obscure than they.

There are various opinions with regard to the proximate cause of scrofula: some attribute the disease to a lentor and other vitiated properties of the lymph; others think the vice is not in the lymph, but depending on the lymphatick vessels themselves, and which they believe arises from various causes, as debility, laxity, and preternatural enlargement. Others think the disease arises from some morbid matter, either engendered in the system, or received from parents, which by some inexplicable process is secreted from healthy fluids, and deposited in particular parts

of the body, especially the lymphatick glands. There is no necessity to expatiate in this place upon these diverse notions; for whether they be correct or incorrect, unless they be more accurately investigated, no curative indication arises out of them, which calls for a change of climate. The remote causes of this disease are not any better understood; for it is not agreed among physicians whether a slender diet, consisting principally of fruits and the like, similar to that of the poor, and especially of the country people, should be freely used; or whether a more generous diet and abounding in the luxuries of the rich, is best suited to this disease. I will not venture to assert that scrofula arises from the effects of any particular climate: for it is scattered throughout the terraqueous globe. It is known in all regions, whether cold, or warm, or temperate; and every age has witnessed it. Universal as this plague is, yet, if I be not deceived, it is most common in cold moist countries; and of rare occurrence in temperate and dry ones. From the observations of some of our physicians who have travelled in Italy, this disease is more rare there than in our island. It is also more rare in Spain. A very intelligent man, who practised medicine many years in Cadiz, replied to my enquiries on this subject, that



he had seen very few persons there labouring under this complaint, and none affected with rickets, a disease which many physicians imagine to be nearly allied to scrofula. But I have known other physicians to affirm that scrofula was quite frequent in Spain. From these things, therefore, scarcely any thing can be gathered until the fact is more accurately investigated. There are some who strenuously declare that this complaint is more frequent in Ireland than in Great Britain; and in the western parts of this island than in the eastern; a circumstance that can be attributed to no other cause than the greater humidity of those parts. And indeed in this island, so far as I am able to ascertain, it is more frequent in moist places than in dry. It is therefore probable enough that a scrofulous patient would receive some relief from travelling into dry and moderately warm countries. This will perhaps appear a very uncertain expectation; but if I am not much deceived, it is greatly strengthened by the history of the disease, and by analogy of those things that have an useful or pernicious influence.

Although scrofula rarely falls upon the lungs before the patient has reached the fifteenth year of his age, yet generally it is found much earlier in other

parts of the body, especially in the glands of the neck. Sometimes indeed, and not rarely, no symptom of scrofula is observable, until tubercles are formed in the lungs, and consumption has commenced, which doubtless had arisen from this source if the patient should have had an hereditary taint, that is to say, born of scrofulous parents. When scrofula shows itself in external parts of the body, it is for the most part between the fifth and twelfth year, and sometimes, though rarely, it afflicts the unfortunate victim even from its infancy. Sometimes also, but very rarely, it appears in more advanced age. When the disease occurs but once, mostly about the age of puberty, it is cured by the efforts of nature, and spontaneously disappears; and never after does it trouble the patient, unless unfortunately it falls upon the lungs, and produces consumption. How this relief is effected, I confess I do not know. Great changes are produced in the human constitution at that period, which are not accurately understood: but by these changes alone, many diseases are entirely cured. This is a remedy therefore that we can with difficulty comprehend, and never be able to imitate. But another most efficacious remedy in this disease, and not an artificial one but produced by nature, it is acknow-



ledged we can imitate by a change of climate. It is universally known, that external scrofulous tumours are not always stationary, but at one time are augmented, at another diminished; sometimes vanish, and afterwards reappear. These changes are observed to be produced by the different seasons of the year. Scrofulous swellings begin, for the most part, about the winter solstice; in the spring they are increased; but upon the approach of summer their augmentation ceases; during the summer and autumn they disappear, or at least become very much diminished; and on the return of winter they are reproduced. Frequently too, when these tumours suppurate and produce foul ulcers, they will not yield to any remedies, but, on the approach of summer, they spontaneously heal. Now tubercles in the lungs, as far as we are able to learn from various symptoms, are observed to be affected in the same way by the different seasons of the year. For the patients in the winter or spring are often affected with a slight, frequent, troublesome, and dry cough, and difficult respiration. From these symptoms, especially in those of scrofulous disposition, consumption is always to be feared. Yet not unfrequently they spontaneously recede during the summer season, but return in autumn or in

winter; and upon the advance of spring, death carries off the patient.

Is it not therefore highly probable, that the winter season is extremely injurious to all ulcers and scrofulous tumours wherever they may be seated? It is not altogether unlikely either, that the severity of a cold climate supplies certain remote causes, both exciting and predisposing, of the disease. And if we admit this, by analogy it must be granted: that summer, or a moderately warm climate will remove, or guard against those remote causes, so that every obstacle to the resolution of the tumours and the healing of the ulcers being removed, the healing powers of nature would overcome the disorder. The disease lurking in the constitution generally falls upon the weak parts. Now, moderately warm air is favourable to respiration, and invigorates the lungs: why then should we not think that a moderately warm climate would in this manner overcome consumption, or in some other hidden way would ward off the proximate causes of the disease? But in whatever manner the injury has arisen; whether winter gives rise to the remote causes of the complaint, or only exerts an injurious effect upon the disease already existing: it

is clearly evident, that the danger can be avoided in no other way than in flying from the intemperance of the winter season, by travelling into warmer countries. If the patient should undertake a journey into suitable countries, where he could sojourn for a sufficiently long time: he might enjoy a perpetual summer throughout the whole year, or if necessary, for many years together. Thus might all the inconveniences of our long winter be avoided; and whatever good is received from our summer, might be thus derived at pleasure from the summer season of foreign countries; and we might expect, not only that a stock of health would be procured, but also that it would be greatly augmented. And indeed to me it does not by any means appear absurd to expect, that if a summer lasting for four months exerts so powerful an influence as to heal scrofulous ulcers, dissipate tumours, and in fine, drive away the disease for many months; a perpetual summer would not only hinder the return of the complaint for a long time, but also change the whole habit of body, and radically extirpate the scrofulous disposition, so that all danger of scrofulous consumption afterwards supervening, would be entirely prevented. It cannot be objected to these arguments, that scrofula is sometimes found

in warm countries: for it is well known that climate exerts much more powerful effects upon foreigners than upon natives. When the constitution is accustomed to much heat, certainly it does not derive much advantage or inconvenience from it. If therefore heat is a remedy for the disease, the more one is accustomed to it, the higher is the degree of it that may be employed; and perhaps nothing else is requisite to cure the scrofula of Spain, than a journey into a still warmer climate.

All these circumstances are greatly confirmed by observation of the effects which experience shows to result from a change of climate, in curing or preventing incipient consumption. Many of our inhabitants every year, who have every symptom of incipient tubercles in the lungs, seek milder climates upon the approach of cold weather, where they remain one or two winters. Some are relieved altogether from the disease, and return to their native country healthy and robust, and never afterwards perceive any sign of consumption. Whilst others, who have tarried abroad only one winter, return home believing themselves cured: but in the first winter they are seized with their former complaint, and die in a short time. If

then a change of climate exerts such a mighty influence in curing this disease, that it can remove or dissipate tubercles already formed: how much more powerfully ought it not to operate, in preventing them. And so the fact is: for though scrofula sometimes occurs in the warmer climates,<sup>19</sup> yet consumption of the lungs is rarely observed. It is reasonable therefore to expect, that our scrofulous patients who have gone abroad into such countries before the phthisical age, will be free from consumption. From all these facts it appears very evident to me, that a change of climate promises the most advantageous effects in curing and preventing phthisis pulmonalis, arising from scrofula; but certainly it is much better to guard against a disease so dangerous, than to contend with it when already formed.—The learned Mead long ago advanced a similar opinion, in his most excellent medical maxims and precepts, respecting the use of a change of climate in guarding against

<sup>19</sup> This disease is *very common* in Mexico. Indeed it appears to be a more common complaint than is generally imagined. Professor Barton says, in his lectures on the Practice of Physick, that it is an extremely common disease among our North American Indians. This fact, which the professor has



consumption in persons of scrofulous habit. I shall here quote his words: "A change of climate often

substantiated by the most satisfactory proof, seems, if we admit the identity of scrofula and consumption, in direct opposition to the assertion of his predecessor in that chair, the late Professor Rush, who says this last disease "is unknown among the Indians in North America."\* Dr. Barton says, that it is a complaint very rife among those tribes the most remote, and who have little or no intercourse with the whites, and that its fatality among the Onondago Indians of the state of New York, has nearly exterminated that tribe. There is every reason in favour of this assertion; for, that scrofula does afflict them is incontrovertibly proved, and where this disease is found, phthisis pulmonalis cannot be a stranger. It will appear from the text above, that Dr. Gregory was not very sanguine in his expectations of the radical cure of scrofula by a change of climate; and in those particular stages of the disease in which he hints its inefficacy, there will be found but little indeed, to cause a difference in opinion from this learned author. The basis of the hope of curing scrofula by a change of climate, rests undoubtedly on the fact, that an atmosphere surcharged with moisture, is highly favourable to the production or evolution of scrofulous symptoms, when they have not yet appeared, and to the evident aggravation of them, when the disease is already formed. The change from a climate possessing such unpropitious

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\* Thoughts on the Cause and Cure of Pulmonary Consumption.



affords health, especially if there should be danger of the disease (that is scrofula) falling upon the lungs;

qualities for the scrofulous, to one endowed with an uniform dryness and elasticity with a view to cure or alleviate the disease, is far from chimerical. In my practice on ship board, I have seen actual benefit from such a change, and have had one or two cases of very troublesome scrofulous ulcers of the arms and legs, which resisted pertinaciously every effort to heal them, but rapidly healed under the same remedies after a change of climate, and even under the disadvantageous effects of a less healthy and pure diet, than that which the patient had used in port. The experience I have had with this disease is indeed but limited, for scrofula is far from a common complaint among sailors, though more frequent than consumption: yet it has been such as to induce me to believe that more relief may reasonably be expected from a change of climate, even in the more advanced stages of the disease, than Dr. Gregory is inclined to think. I know not indeed, whether the sea-sickness itself has any good effect on obstinate scrofulous ulcers—perhaps not—but this I know, that in the cases I allude to, the ulcers exhibited very soon after going to sea, a much more healthy aspect. I know further, that glandular tumours are undoubtedly diminished by this sickness. I have four or five times seen the detumescence of swellings in the neck which I apprehended were strumous, take place during a few days of rough weather, and twenty times and more have I observed the dissipation of venereal buboes

provided that the patient chooses a country not too warm, nor too cold, nor an unhealthy season, for the

from the same cause. I have remarked too that in those cases where these buboes became diminished, the subjects of the disease were mostly *landmen*, who having been never before to sea, were violently affected by the motion of the ship, being for days together vomiting, scarcely without intermission. Dr. Barton mentions in his lectures, the case of a young gentleman who came under his care in this city, for a goitrous swelling. The doctor, after recommending a variety of remedies, which were ineffectually tried, advised a sea voyage. This was performed, but without any relief; another was undertaken to New Orleans, where the patient, after being attacked by a malignant fever, recovered from his first complaint. The disease of goitre bears no small relation to scrofula, and a moist atmosphere has no little agency in generating it. The theory of Dr. Barton with respect to this complaint, and which the Doctor has verified by a few but strong corroborative facts, refers its origin to the same\* causes which produce intermittent and other fevers. The activity of moisture in marsh exhalations, is well known. How reasonable then the hope that this singular and, in the female sex particularly, this very unseemly complaint, would derive much benefit from a change of climate to one of a dry atmosphere! But to return to scrofula. I have said the foundation of the hope of relieving scrofulous patients by a

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\* Vide Memoir concerning the Disease of Goitre, &c. Philad. 1800. p. 57.

change." Under the protection of such a name, I repeat my opinion with confidence; nor am I

change of climate, is built on the acknowledged pernicious agency of moisture on the disease. In corroboration of this, I will quote a passage from Dr. Russel's\* valuable work on this complaint. "The disadvantages of a bad climate, and of an unfavourable local situation, can only be radically surmounted by changing the place of residence to one more salubrious; or, if such a change is not practicable, by adopting the best artificial substitute to correct the inconvenience. As cold and moist air is found to be so highly prejudicial in scrofula, we endeavour to substitute an artificial atmosphere, which may be warm and dry, and which therefore may, as far as possible, counteract the pernicious tendency of an inhospitable climate. Artificial fires are equal to support a moderate and proper temperature within doors, and persons of delicate constitutions, who are threatened with an attack of scrofula, ought to be permitted to go abroad in winter only for a short time at once, so that they may not be chilled, nor suffer any injury from long continued exposure to cold and damp air." In another place† Dr. Russel attributes so much good effect to the influence of regular and continued exercise in preventing scrofula, that it would seem as if the doctor had kept in his mind the exercise produced by the motion of a

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\* Treatise on Scrofula. Edinburgh, 1808. p. 59.

† Ibid. p. 52.

ashamed that my conclusions should be rendered sound in this manner. With regard to the benefit that may be expected in scrofulous consumption, from the exercise itself of the journey, I shall not presume to advance any thing from experience. But cases related by Sydenham show, that exercise produces the happiest effects on this complaint. Relief and assistance therefore, might be expected from the exercise of the journey itself, in this, as in many other diseases.

Another, and not unfrequent cause, of consumption, in this island at least, is hæmoptysis. How it produces consumption, I shall not undertake thoroughly to explain; since however, experience has taught that phthisis pulmonalis generally succeeds hæmoptysis, I have no doubt but that this might be as-

vessel at sea, when he wrote as follows: "The exercise of persons studious to ward off an attack of scrofula, ought to be regular, moderate, and long continued, sufficient to dispose them to rest, but not of incurring that degree of fatigue which would excite a temporary fever, or permanently impair the strength. It seems immaterial what kind of bodily exercise is preferred, provided the above-mentioned circumstances be properly attended to by the patient."

signed as the cause of consumption. Certain physicians, as we have mentioned above, think that a mere rupture of the blood-vessels, such as occurs at least generally in hæmoptysis, produces an incurable ulcer and consumption; for by the violent circulation of the blood in the lungs, and their continual motion in respiration, and the free access of air, the wound is kept open, and its healing perpetually obstructed. It is not necessary to repeat the arguments by which this opinion is refuted. Experience satisfactorily proves, that consumption does not happen at least in most cases, from a mere rupture of a blood-vessel in the lungs, nor indeed from suppuration itself, provided that viscus had been previously sound. Others assign another and indeed much more probable cause of the disease: namely, that the blood effused into the lungs from ruptured vessels is not intirely rejected by coughing, but some portion of it remaining in the lungs, is there putrefied, and irritates and corrodes the neighbouring parts, and at length produces a foul and incurable ulcer. I do not doubt, but a great deal of injury might arise from this source: yet if I am not mistaken, that injury rarely happens, unless the lungs have been previously affected with some taint. For in other parts of the body, provided



the constitution be sound and vigorous, blood effused in the cellular texture, is soon absorbed without any injury or danger. I have seen the arm, after blood-letting unskilfully performed, covered with a livid hue from the wrist up to the shoulder: yet neither suppuration nor gangrene arose from it; the blood spontaneously disappeared, so that after twenty days no trace of the affection was left. Often also, there are no ulcers formed in the lungs after hæmoptysis, although it is hardly probable that all the blood effused in them is expectorated by coughing. If therefore no such injury is produced after hæmoptysis, it is probable that the effused blood not rejected by spitting, has been taken up by the absorbent vessels. But if, from some cause or other this is not effected, we may readily believe, that an ulcer and other bad consequences might arise from the putrefaction of blood effused into the cellular substance of the lungs. Besides, such a load in the lungs would without doubt excite frequent coughing, than which nothing contributes more to produce consumption, as will afterwards be proved.

Lastly, there are some who inculcate the notion



that hæmoptysis is not the cause of consumption, but only a sign and effect of its cause.<sup>20</sup> They believe that phthisis arises from tubercles in the lungs which had for a long time existed before hæmoptysis begun, and which they affirm, brought on that disease, or rather symptom; in other words, the blood-vessels being so compressed by their own mass, that the blood is disembogued either by transudation or from ruptured vessels, into the lungs. Dissections also of dead bodies plainly show, that tubercles, whether scrofulous or produced by other causes, are a frequent cause of consumption, or at least accompany it; and it appears from observations that túbércles

<sup>20</sup> An ingenious French writer, whom I have before quoted, and who has taken particular pains to refute the reasoning and arguments advanced by Dr. Thomas Reid and others, in favour of the use of sea-voyages in pulmonary consumption, after strenuously opposing the mode of cure recommended by Dr. Reid, by means of emeticks, and asserting that it is predicated on a false theory of the disease, asks with a tone of great self-conviction: "*quel est le médecin à qui il soit encore permis d'ignorer que ces phlegmes, que ces mucosités, que ces colles sont l'effect et non la cause de la phthisie?*"—*Traite sur la Nature et le Traitement de la Phthisie Pulmonaire, par Julien Bonnafox Demalet, p. 170.*

arise in the lungs from other causes besides a scrofulous disposition. Certain mechanicks are very much exposed to dust from the nature of their trades; as for example, those engaged in grinding flour, cutting stones, hackling flax, and other similar occupations, are very liable to tubercles in the lungs and to pulmonary consumption; nor can this be imputed to any other cause than the dust which they daily receive into the lungs. Yet I can by no means believe, that consumption does not arise from hæmoptysis, unless tubercles have previously existed in the lungs: for in the dissections of the bodies of those who died of this disease, a large ulcer is often found, but no tubercles; many phthisical patients also, after an attack of hæmoptysis, are carried off, who before this seized them, had never exhibited any signs of tubercles. Sometimes also, after a badly treated peripneumony which has terminated in suppuration, a genuine consumption of the lungs follows, although there had before been no signs of tubercles. And sometimes, though rarely, consumption is produced by great external force inflicted on the lungs.

In the proximate and remote causes of hæmop-

tysis then, and in the state not only of the lungs, but of the whole system, which precedes and accompanies it—is to be sought the reason why phthisis pulmonalis succeeds this complaint.

From the observations of physicians it satisfactorily appears, that a disposition to hæmoptysis is often received from parents; hence it is evident, that the disease does not derive its origin from any slight or accidental cause, but from the formation and peculiar constitution, as well of the lungs, as of the whole body. For it is well known that parents often transmit their temperament and peculiar conformation, to their offspring: and, at least in many cases, we see by an evident deformity of the chest, that a defective structure of the lungs exists. Wherever such a formation occurs, the lungs are never properly distended, and the motion of the blood through them is obstructed; hence arise an irregular circulation and congestion which weaken and distend the blood-vessels, and render them liable to rupture. Many of the exciting causes which frequently produce hæmoptysis, evidently induce a congestion of blood in the lungs. For example: violent exercise, or great straining of the body as in running, or in lifting great weights;

immoderate coughing, vociferation, singing, &c. Before the blood is discharged, the most evident symptoms of irregular determination and turgescence of blood in the lungs, are almost always observed: such as a sense of weight, or heat, or uneasiness, or pain in the breast, and a redness of the cheeks. Upon the discharge of blood, all these spontaneously, and generally very soon, disappear; and often by a seasonable blood-letting, the hæmorrhage is altogether prevented. It has been observed also, that signs of spasmodick constriction of the extreme vessels, precede and accompany hæmoptysis. Sometimes a sudden application of cold to external parts, especially if the body has been previously heated, produces hæmoptysis: and all physicians know that nothing conduces more to prevent and cure this, than promoting and restoring the due determination of the fluids to the surface of the body. It appears plain therefore, that an irregular determination and congestion of the blood in the lungs, produces hæmoptysis; wherefore it is now to be inquired, how that irregular action is produced, and why the blood is determined to the lungs in such an increased quantity.

Experience shows that hæmoptysis happens especially to those who are accustomed to high living, and who have changed from a more active kind of life, to one of an indolent and more sedentary nature; but most of all to those in whom some customary excretions, particularly of blood, existing either naturally or preternaturally, have ceased: and of this kind, hæmorrhages from the nose, and in females, the menses, are the principal; to these might be added an omission of a customary blood-letting, and sometimes, though rarely, suppressed piles. Hæmoptysis also is observed to happen oftener in the spring of the year than at any other time; and for the most part to men only between the eighteenth, and thirtieth, or thirty-fifth years of age, in which period a plethorick state is known to exist from various symptoms. It cannot then be doubted, that hæmoptysis may arise like all other hæmorrhages, from plethora, and therefore the causes of that plethora which produces this complaint, will now be briefly related.

During infancy, when the body is daily growing, there is the greatest abundance of healthy blood, which is required for nourishing the system, and sup-



porting its growth. This indeed is a true plethora, yet never of an unhealthy kind. At that period, the vessels easily yield, and are dilated, until the body has arrived at its proper size; but when the vessels have become stronger, and resist the blood, then plethora is perceived, and hæmorrhages and other diseases are produced by it.

From the observations and experiments of the celebrated Winthringham, junior, it appears: that a different proportion of thickness and strength of the arteries and veins takes place at different periods of life. In infancy, and also in youth, the veins possess much more strength and thickness than the arteries: in more advanced age, the arteries obtain in their turn the greatest strength. The proper equilibrium is observed to take place about the thirtieth or thirty-fifth year. Hence, if plethora exists in the system before the patient has reached his thirtieth year, it shows itself only in the arteries, or at least particularly in them; because the veins, from their greater thickness and strength, are able to resist an excessive fulness of blood: but the arteries, from their greater laxity and weakness, receive too great a proportion of blood, and therefore become distended.



Thence arises congestion; and upon any sudden and violent action which greatly disturbs the distribution of the blood, a rupture of the arteries and consequent hæmorrhage is produced. After the thirty-fifth year, hæmorrhages of the veins generally occur, but rarely of the arteries.

When the increased arteries are full of blood, and yield naturally and equally to the strength of the veins, and all parts of the body daily increase, no inconvenience can arise from that natural plethora. But when the growth of the body ceases, and morbid plethora follows, hæmorrhages ought first to appear in that part of the system which has first reached its proper size. Hence at that period hæmorrhages are to be expected in the head, because this part, as is well known to all physicians, painters, and statuaries, receives its full growth before the other parts. And this is the fact: for hæmorrhages of the nose are found to occur before any others, and generally indeed, from the fifth to the eighth year. But when all parts of the body have attained their full size, the reason for hæmorrhages happening most frequently in the head, ceases to exist. Then the veins, possessing as yet more strength than the

arteries, hæmorrhages ought to happen especially in those parts in which the blood flows with the greatest fulness and force. Hence appears the reason why they happen at that period in the lungs: for the same quantity of blood flows through the lungs as circulates through all the rest of the body. If therefore, the distribution and equable circulation of the fluids should from any cause be very much disturbed, it is evident that all the ill consequences arising thence, would be felt particularly in the lungs: for however small that viscus may be, its blood-vessels always contain a great quantity of blood. A still larger quantity, or even a greater impetus of the blood, could not be borne without danger. They are consequently easily ruptured, and hence arises hæmoptysis. But afterwards, when the arterial system has received more strength than the venous system, that is, when man has passed his thirty-fifth year, hæmorrhages from the lungs, and indeed from the arteries in any part of the system, should not any more happen. And the plethora, if any exists in the system, is felt particularly or altogether in the veins. This disorder, and its consequences, most frequently happen in parts of the body where the motion of the blood in the veins is most slow. Hence in advanced age the

flowing of blood occurs oftenest from the hæmorrhoidal veins; for the blood in them which is greatly retarded, does not in fact return to the heart, but passes through the vena portarum, and flows through the liver. Besides, the hæmorrhoidal veins have but little assistance from muscular motion, and want valves altogether. Hence follow frequent and great congestion, and not seldom tumours or varices of the veins, and ruptures and effusions of blood. From similar causes congestion and effusion of blood often happen in the brain at the same age, and paralysis and apoplexy (which Hoffman calls hæmorrhage of the brain) are produced.

From all these circumstances we may certainly, if I be not mistaken, conclude that a plethorick state of the whole system and an excessive determination and congestion of blood in the lungs, is the cause of hæmoptysis. Yet it is often observed, that neither hæmoptysis nor other hæmorrhages, nor any other inconveniences arise from that plethorick state which succeeds the cessation of growth in the body; nor from the excessive thickness of the veins and laxity of the arteries, provided the constitution shall have been sound and vigorous: unless some powerful ex-

citing cause concurs at the same time. For most men and other animals are free from these inconveniences. But when a morbid disposition has already existed in the system, especially weakness of the lungs, either derived from parents, or generated by a malformation of the chest, or arising from other more obscure causes: hæmoptysis is frequently produced. And although no bad conformation may exist, particularly in the lungs, if only the habit of the whole system be weak, if a plethorick state should supervene, or if some sudden and violent external cause greatly disturbs the distribution of the blood, the bad consequences arising thence, are felt for the most part in the lungs. Experience evidently shows, that from hæmoptysis accompanied by such a determination and congestion of blood in the lungs, that viscus receives such an injury, that an incurable ulcer and consumption arise from it, although a simple wound would never be able to induce such bad consequences.

I can by no means accurately explain what changes are produced from a congestion of blood in the lungs, and why an incurable ulcer or wound should occur during the existence of such a state of this viscus. We

understand indeed that such a state of the lungs is far from being healthy and natural; and if it be necessary for curing a wound or an ulcer, that the constitution of the whole body or any part of it, should be healthy and strong, it is no wonder in this case, when the lungs were already somewhat diseased, that a wound in them would be difficult to heal. Perhaps an excessive fulness of blood, and weakness of the vessels and of other solid parts, impede the absorption of effused blood, or a healthy suppuration of an ulcer. Whenever the pathology of this viscus shall be better understood, we may be able to explain this circumstance more accurately. In the mean time, in my opinion, it is fair to attribute consumption succeeding hæmoptysis, to a præternatural determination of blood to the lungs. For this not only gives evidence of incipient phthisis, but accompanies the disease through almost its whole course, to its last stages, and in proportion to the greater or less force of this determination, the complaint is augmented or relieved. Thus all remedies which are agreed to be useful in preventing, mitigating or curing consumption, manifestly tend to diminish the abundance of blood, moderate its force, remove the congestion, and promote an equal distribution. There is no



occasion to say much to show how my opinion is confirmed; it naturally arises from the theory of hæmorrhages, and especially of hæmoptysis. Who does not know that light diet, consisting of milk and fruits, and frequent blood-letting, are of great service? The summer season, warm clothing, flannel shirts, frequent and moderate exercise, riding on horseback, gestation in a carriage, and sailing,—only do good by diminishing the congestion of blood in the lungs, and promoting a determination to other, especially to external parts.

We have already said enough with regard to the effect of the different seasons of the year in scrofulous consumption: the same thing happens in phthisis arising from hæmoptysis. There are some persons who in the spring of every year, have all the signs of congestion of blood in the lungs and incipient phthisis; an abscess is formed in the lungs, it bursts, and pus is expectorated. On the approach of summer however, the complaint ceases, and the patients enjoy the appearance of health. But on the return of winter, the disease recurs again and again. In this way life is sometimes protracted for twenty years and more.



Although summer is very favourable to the consumptive, yet winter is by no means the most dangerous season. All agree that spring and autumn are much the most injurious to them; because, in those seasons the distribution of the blood is most disturbed, by the great and sudden changes of the weather. The perspiration is copious in the summer from the heat of the air, and a due distribution to the surface of the body is promoted: the determination however to the kidneys, and the quantity of urine, is diminished. But in the winter time, the external cold checks perspiration, and drives the blood from the surface; and then the quantity of urine is much greater. There is a kind of equilibrium therefore, between the skin and the kidneys, so that when the excretion by one is checked, it is augmented by the other. Hence many inconveniences arising from the heat of summer, and especially from the cold of winter, are happily avoided. But in the spring and in autumn that equilibrium is vacillating; hence if an excessive determination to the lungs or any other part shall already have occurred at those times, especially by the action of the exciting cause, which the sudden changes of the weather afford, it ought to be greatly augmented. When however a fixed deter-

mination of blood takes place, either to the surface of the body, or to the kidneys, the irregular determination to the lungs is lessened: and therefore the consumptive feel much less inconvenience from the disease in summer and in winter, when these determinations are regular and constant. Indeed, instances have frequently occurred which plainly show of how much consequence it is, for preventing, or curing, or alleviating this disease, that the determination of blood should be averted from the lungs. All physicians know that while women are pregnant they rarely die of consumption of the lungs. Nay, if a woman already decaying in a consumption becomes pregnant, the progress of the disease is generally arrested, or at least greatly retarded, until she brings forth her child. Yet often in a short time after parturition, sometimes in a few weeks, sometimes in a few days only, they die of consumption. All these facts, if I am not deceived, are to be attributed for the most part to the different distribution of the blood. During gestation, a great quantity of blood flows to the uterus, for the nourishment and formation of the fœtus. Hence its determination to the lungs is averted; the congestion in them is lessened or removed, and all the evils arising from it, greatly

mitigated, or altogether cured. But in a short time after parturition, that natural and healthy determination to the uterus, ceases. It is not surprising, therefore, that the congestion of blood should afterwards be increased in the lungs, and that the disease arising from it, should grow worse. We might indeed believe *a priori*, that those unfortunate women had but one hope left, which nature spontaneously extended for their relief. If that great determination to the uterus should suddenly cease, and no other natural one was to succeed, it is evident that the disease in the lungs would be greatly augmented, and that the greatest danger must arise thence. But it is known, that in a short time, generally a few hours only after parturition, a great determination naturally takes place to the breasts. It is reasonable enough then to expect, that this new determination would have the happiest effects, provided it should be promoted in the way nature intended, that is, by the woman suckling her child: for the congestion in the lungs ought to be diminished or altogether taken away, and life be protracted until the disease be cured by the powers of nature. And in fact, I have obtained from the highest authority some examples, and have seen one myself, in which this experiment was made,

and consumption of the lungs was most evidently cured altogether, without the use of any other remedies whatever. And I do not doubt but that this remedy might cure many phthisical persons, especially if the disease has not arrived at its last stages. But the experiment is rarely tried, for there are few who would believe that a woman already consumptive and nearly dying, could give milk to an infant without danger to herself and the child. Yet experience teaches that such women bear children and nourish them, not only without injury or danger, but with the greatest benefit. The children also, at least in the generality of cases, are never weak nor sickly, nor are they observed to experience any inconvenience from the disease under which their mothers laboured. I can hardly believe, therefore, if women suckle their own children, that any danger would arise from it, either to the child or parent; and I am clearly of opinion that it might have the happiest effects; it is better surely in so dangerous a disease, to try an uncertain remedy, than leave the patient to certain death.—But to return to the subject.

Although the determination to the kidneys is greater in winter than in summer; yet it is never

constant: for it is often disturbed by the sudden changes of the weather, which generally occur in winter very frequently. But if the winter's cold be ever so continued, the distribution of the blood would be daily disturbed, unless the air of the chamber and the external air should be of the same temperature. When the external air is excessively cold, the air of a room is equal to or greater than summer heat; hence arise great and sudden changes of the distribution of the blood. The reason then is clear why the summer is more salubrious to the consumptive than winter: for the determination to the surface of the body which occurs in summer, is almost continual; and although the perspiration should be at one time more and another less, the determination of blood, unless from some sudden and violent cause which rarely happens, is wholly changed. The same reason may be given for the effects of seatons, of issues, and of blisters, which not unfrequently give relief to the consumptive.

There remains therefore, one method by which we can always hope to remove the congestion of blood in the lungs; namely, by promoting a determination to the surface of the body. Yet this, as we have often



already observed, is most effectually and most certainly performed, by a moderate, uniform, and constant warm air. But our climate possesses such an air only for a few months. A milder climate should therefore be sought by the consumptive: and daily experience confirms sufficiently the propriety of this advice; for many of our inhabitants are annually snatched from death, which under other circumstances would inevitably happen. Warm clothing and moderate exercise, are somewhat similar to this remedy; and whatever good is derived from them is, in my opinion, to be attributed entirely to a change in the distribution of blood. With regard to clothing, there are a few things to be observed. It is well known that flannel shirts are exceedingly beneficial in this disease. This is surely a most simple remedy, and certainly there is nothing more plain than that it will directly promote the determination of blood to the surface of the body. Linen shirts, when there is a profuse perspiration, soon become wet and feel cold; hence perspiration is checked. But flannel shirts easily absorb sweat or moisture, and do not become wet without there is a prodigious perspiration: hence the skin remains dry and warm, and the perspiration is greatly promoted. It is known to every one, that exercise



has a similar effect; it plainly appears therefore, how it could diminish or remove a congestion in the lungs. Indeed at first blush it would not be unreasonable to apprehend dangerous consequences from exercise, by reason of the effect it has in increasing the impetus of blood. If the exercise should be violent, it would without doubt prove very injurious; for walking, riding, and similar more powerful exercises, immediately increase the difficulty of respiration, and other symptoms. But experience has very clearly proved, that moderate exercise, sailing, gestation in a carriage, and not unfrequently riding on horseback,—diminish or remove the congestion of blood in the lungs, and other injuries arising from it. This is evidently to be attributed to the increased determination of blood to the surface of the body. The celebrated Cullen, has mentioned in his lectures a singular case, which satisfactorily confirms this theory. It was that of a man who laboured under hæmoptysis, who, while he remained at home, and used no exercise, was affected very badly, and suffered many returns of the complaint. Yet from riding on horseback he always derived relief; and sometimes, when the disease greatly troubled him, he mounted his horse and rode for some time, with the effect of being freed from the complaint, for

a time at least. Gilchrist relates other examples of a like nature, from the effect of sailing.

But Sydenham extols this remedy more than all other physicians; and not only in the slight and incipient form of phthisis, but even in the last stages of the complaint, when that species of diarrhœa with night sweats termed colliquative, has already come on, and which is generally soon followed by death: "However fatal consumption may be, (says this writer,) yet I firmly maintain, that neither mercury in the venereal disease, nor Peruvian bark in intermittent fever, are more efficacious, than the exercise already commended, (that is, riding on horseback,) is in curing consumption; provided the patient takes care to have his sheets or bed clothes properly dried, and also, that he protracts his ride to a long journey. This I have learned from numerous experiments in which it scarcely ever failed. And although riding on horseback is peculiarly suitable for consumption, yet journies performed in a carriage, when they have been judiciously taken, have had the happiest effects."<sup>21</sup>

<sup>21</sup> Bishop Burnet says, that the lawyers of his time were (*cæteris paribus*) longer-lived than other people; and attributes

Later physicians do not bestow such praises upon this exercise; yet all agree that it is often of the greatest use. It is evident therefore, how much benefit consumptive patients, labouring under hereditary hæmoptysis, might derive from the exercise itself of travelling.

The third, and indeed the most frequent cause of consumption, yet remains to be noticed: namely, catarrh. Every one knows that consumption of the lungs not unfrequently succeeds a protracted catarrh: but it is often difficult to distinguish catarrh from genuine incipient consumption produced by tubercles in the lungs: for the principal symptom, that is the cough, occurs in both; and I do not doubt but that many consumptions attributed to catarrh derive their origin from tubercles. But it is clear enough that catarrh not unfrequently induces true consumption, when no tubercles had previously existed in the lungs. For there are many instances where, after the most evident

this to their riding the circuits on horseback: but this is undoubtedly too violent an exertion, except in the first stages of phthisis. There are few physicians of the present day, I believe, who would recommend their patients to try this jolting remedy, in any other period of the complaint.

symptoms of catarrh arising from common causes, (that is, cold some how applied to the body,) a genuine and fatal consumption of the lungs followed; although there were no previous signs of tubercles, or any disease in the lungs, and where there was no suspicion that a scrofulous disposition existed in the system. Sometimes also, and not seldom, consumption of the lungs arises from whooping cough.

Since therefore, there is not the least doubt of the fact, that long continued catarrh produces consumption, the rationale may now be given; and if I mistake not, the same which we have above advanced respecting hæmoptysis, may be easily applied to consumption arising from catarrh. If congestion of blood in the lungs renders them liable to consumption, we may easily understand how a frequent and violent cough might excite that injury: for it is evident that a cough of this kind impedes the motion of the blood and produces a great turgescence. Perhaps the mucous membrane (which is particularly affected in catarrh) may receive some injury from the disease, which might induce the mischievous consequences. But what that affection is, (if any in fact there be,) I shall not undertake to explain. If the lungs therefore

are weak or diseased, if a defective and contracted structure of the chest exists, or if any taint lurks in the constitution: it is no wonder that a protracted catarrh should produce consumption at that age, in which the greatest determination of blood to the lungs occurs.

When consumption is produced by catarrh, all the symptoms of turgescence of blood in the lungs come on, and sometimes hæmoptysis takes place. The history and progress of the disease is nearly the same, whether it arises from hæmoptysis or catarrh; the same things afford relief and do injury, and the mode of cure is the same. There is not, therefore, the least necessity to repeat in this place what has already been said. If congestion in the lungs be the source and cause of this complaint, that should without doubt be removed in the first place. And this effect is best achieved by means of the remedies before enumerated, and especially by a change of climate.

Of these three most frequent causes of consumption, (or rather two; for hæmoptysis and catarrh might be considered as one,) we have treated sepa-

rately, as if the disease might arise from one or the other only. But it is evident enough that all those causes may concur or be conjoined in the same patient. Catarrh often induces hæmoptysis: perhaps also it weakens the lungs, and renders them liable to scrofulous tubercles. Blood effused from hæmoptysis, and not absorbed, might form tubercles, which in progress of time, might induce inflammation and suppuration. And from compression of the blood-vessels by scrofulous tubercles, effusion of blood, either by transudation or from ruptured vessels might be produced, be followed by hæmoptysis, and cause a frequent and troublesome cough. What has been particularly and separately said of these two causes, may easily be applied to all conjoined. From all these facts and arguments, it may be concluded, if I be not mistaken, that a change of climate would be of the greatest importance in preventing and curing consumption of the lungs.<sup>22</sup>

<sup>22</sup> It seems then agreed, that a change of climate exerts powerful and beneficial effects upon phthisis pulmonalis, whether it arises from hereditary predisposition, concealed scrofula, hæmoptysis or catarrh, and the suppurative terminations of pneumonia. But it seems not to be so unanimously conceded, that this change of climate is always to be made by



It is now our intention to treat of certain diseases which occur in more advanced age, and which arise,

means of a sea voyage, in preference to a journey by land. The opinions on the usefulness, nay curative effects of sailing in this disastrous complaint, are various and diametrically opposite. The late professor Rush was wont to teach the inefficacy of this species of exercise, unconnected with other things, in consumption, from his chair; and the following are his sentiments as delivered in one of his publications: "sea voyages have cured consumption, but it has only been when they have been so long, or so frequent, as to substitute the long continued gentle to the violent degrees of exercise, of a shorter duration, or where they have been accompanied by some degree of the labour and care of navigating the ship."\* On the other hand Dr. Gilchrist, who wrote particularly on the medical use of sea voyages, extols them in the highest terms, as a remedy for phthisis; and relates many cases to prove the justice of his encomiums. He asserts that in some instances a voyage of a few hours has accomplished the most marvellous change in the disease for the better. Dr. Rush, in speaking of a change of climate as a cure for consumption, says, "I do not recollect an instance of its having succeeded, except when it has been accompanied by exercise, as in travelling, or by some active laborious pursuit;"† and with respect to travelling

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\* *Inquiries*, vol. ii. p. 64, on Pulmonary Consumption.

† *Ibid.*

at least in part, from the effects of our climate, and might be cured or relieved by a change of air.

by land, he has the following remarks: "journies have often performed cures in the consumption, but it has been chiefly when they have been long, and accompanied by difficulties which have roused and invigorated the powers of the mind and body."\* Cullen believes it probable that some benefit would be derived from the great purity and more equal temperature of sea air than that of land, in consumption. Dr. Gourlay of Madeira says, that the itinerant consumptive patients who visit that island for their health, seldom recover; but attributes this to the backwardness which people feel to repair thither, until the disease has gained such an ascendancy, that neither change of climate nor any other remedy could have any good effect. I believe there are few points in medicine that have undergone more disputation and admitted more contrariety of reasoning and opinion, than the curableness of pulmonary consumption, and the efficacy of a change of climate, travelling, and sea voyages. It is, certainly, not for me to presume at an attempt even to reconcile the jarring testimonies of venerable and eminent authorities. But as I have in a preceding note, when speaking of the general efficacy of sailing at sea, in the treatment and cure of diseases, asserted that I had seen decided advantages resulting from

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\* *Inquiries*, vol. ii. p. 64, on Pulmonary Consumption.

These fall particularly on the abdominal viscera, especially the stomach and intestines, and greatly

it, I will now mention one or two cases of pulmonary consumption which I then had in view. Previously to doing this however, it may not be irrelevant to remark, in favour of the sea life upon consumptive people, some facts, which prove that the disease is rarely incident to that life. Dr. Lind\* says, "that out of 5741 sailors, who were admitted into the Naval Hospital at Haslar, near Portsmouth, in two years, only 360 of them had consumptions; and in one fourth of these," he continues, "it was brought on by bruises or falls." Hence it may be concluded, that the exercise of sailing invigorates the lungs, and fortifies them against accidents. In addition to this fact, I may state that out of 1045 patients who came under my care from the 1st of June 1809 to the first of June 1811, from among four hundred men exposed to a variety of climates in different parts of the United States, in the bay of Biscay, the British Channel, the Atlantic ocean, and in different sea-port towns,—there were only *six* cases of pulmonary consumption. These six, exclusive of four other cases of phthisis, received from a French hospital. The record book from which I take this account, exhibits a multifarious variety of diseases; among them many cases of pleurisy, and nearly three hundred of catarrh, which so frequently causes consumption. It appears then from this fact, that the

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\* Essay on the means of preserving the Health of Seamen.

obstruct their functions. Hence they are not only experienced in those parts, but affect the whole

disease of phthisis pulmonalis is not only a rare complaint at sea, but that the acute diseases which so frequently terminate in or produce it on shore, have not the same fatal tendency when they occur under the influence of the sea air.

Of the four cases I have just alluded to, I may remark, that two out of the four died in a few weeks after they were received on board from the hospital. The other two recovered. These patients were evidently in a deep consumption of the lungs. Every symptom that characterizes this complaint, was evident in each of them. The passage across the channel considerably relieved them, and in the course, one of four and the other of six weeks of the voyage, both entirely recovered. The recovery of these patients was as unexpected to me as it was to themselves; and I believe their only hope in coming on board was, that they might survive long enough to reach their native shores, and die with their friends.

Since writing the note containing a quotation from Dr. Gordon's letter respecting the climate of Madeira, the work of Dr. Gourlay has fallen into my hands. This writer mentions,\* the disease of phthisis pulmonalis as an endemick of

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\* Observations on the Natural History, Climate, and Diseases of Madeira, during a period of eighteen years, by Wm. Gourlay, M. D. London, 1811.

system, and often produce many serious, and indeed most obstinate disorders. But we shall here only

that island. He says its fatality is prodigious among the inhabitants. He reprobates the practice of sending consumptive patients to the island, so far advanced in the disease that their death, which is inevitable, can only be protracted for some time. He thinks the summer in that climate too hot for consumptive persons. "Under all circumstances," says Dr. Gourlay,\* "in Madeira, the fittest season for invalids, is from November to the beginning of June. This was the opinion of the late Dr. Cullen, who, in his lectures on this disease, was wont to observe, in directing a change of climate, that it was as pernicious for phthisical patients to pass the summer in a very warm climate, such as Madeira, as to remain in England in winter; and indeed that the most benign climate in such cases, was found in the south of England, and in the winter of southern latitudes." From the assertion of Dr. Gourlay respecting the fatality of consumption in Madeira, and the extreme frequency of the disease among the inhabitants who have never been out of the island, I think it is evident, that the climate must contain some vice that is inimical to the consumptive. How that place received the high character it has obtained among physicians, and among consumptive patients, I know not: certain it is, that it is wholly unmerited.

Since

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\* Observations on the Natural History, &c. of Madeira, by Dr. Gourlay, p. 93.

treat of two complaints of this nature: viz., of hypochondriasis and gout.

Since the above went to press, the "Introductory Discourse"\* of Mr. De Witt Clinton, of New York, has fallen into my hands. From it I shall make the following interesting abstract, and I will venture to do so, without any other apology than to say the matter is very pertinent to the subject of this work, and is already so condensed into a few well-written paragraphs that I could not give the substance of the remarks, without detailing them in the words of the author.

"The comparative mortality of London has not only greatly diminished within the last fifty or sixty years, but a number of diseases which, previous to that period, were very destructive, have almost entirely disappeared; for instance, the plague, the rickets and the scurvy: while others that were formerly considered very mortal, are now viewed as no longer formidable; such as the small pox, the dysentery and intermittent fevers.

"Other diseases, supposed to be less dependent on the physical than on the moral and political changes which Great Britain has undergone, have increased in number and fatality; and are attributed, chiefly, to the increase of manufactures;

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\* Delivered before the Literary and Philosophical Society of the State of New York, on the 4th of May, 1814.



and, consequently, of the number of sedentary and otherwise unwholesome occupations; to the augmentation of the national wealth, and with it, of luxury and high feeding; and to the fluctuations in the conditions of life, attendant on the spirit of commercial speculation. To the first of these sources is ascribed, in part, the regular increase of the consumption, during the last century; to the second, the more inconsiderable, but scarcely less regular, increase of apoplexy, palsy, gout, and sudden deaths; and to the last, the more frequent occurrence of insanity in its different forms: and the increase of intemperance and vice, in a large and populous city, doubtless contributes much to the augmentation of all these diseases.

“ Dr. Heberden states the proportion of these three classes of disease, at the beginning, middle, and end, of the eighteenth century, to have been as follows:

	Beginning.	Middle.	End.
Consumption,	3,000	4,000	5,000
Palsy, apoplexy, &c.	157	280	300
Lunatic,	27	75	70

“ If we compare the mortality from consumption, at those three periods, with the total mortality, we find, that in 1669 the deaths, from consumption, were, to the whole, as

	1	to about	6	2
In 1749,	1		5	5
1799,	1		3	8
1808,	1		3	6

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“The reports of consumption, in other parts of Great Britain, correspond, in a great degree, with the accounts of its prevalence in London, and, therefore, render this ascription of its causes and origin unsatisfactory.

“Dr. Lettsom, however, in a letter to Dr. Hosack, on the diseases of London, (*Amer. Med. and Phil. Reg. vol. 2.*) says, “Whilst the phthisis pulmonalis is rapidly increasing in America, and in the European continent, it is *diminishing* here. The croup is less fatal, in consequence of the immediate and free use of the lancet, and of leeches, with purgatives, than heretofore; nor is angina scarlatina either so frequent or so fatal. The typhus is almost extinct, and the cholera morbus is unfrequent; and, as far as my experience extends, the syphilis is milder or easier cured; and, lately, such has been the prolongation of health and life as to lessen the premiums of insurance considerably.”

“Out of 19,954 deaths, in London, in 1808, 5,220 are ascribed to the consumption. The christenings, in that year, were 19,906, nearly equal to the burials.

“In 1809, the healthiest year which London ever enjoyed, there were 16,680 deaths, 4,570 of which were produced by the consumption; the number of christenings was 19,612, making the excess of births above the deaths nearly 3,000. (See the London Annual Medical Review and Register, for 1808 and 1809.)

“Dr. James

“Dr. James E. Smith says, that “in Italy, consumptions are found to be very contagious, though less evidently so in England.” It is intimated, if my memory serves me, in that excellent work, the *Emporium*, that the general use of cotton shirts, &c. may have a pernicious influence in producing the disease. Its increased fatality in Europe, as well as in America, is, probably, owing to a complication of causes; and, indeed, the periodical prevalence and disappearance of certain diseases, must be classed among those arcana which providence has concealed from man.

“Salubrious as the climate of Madeira is generally reckoned, we find, that even there pulmonary diseases cut off a great number of the inhabitants. Of the various districts of North America, New York has been considered, by many, as being especially favoured with regard to the mildness of its seasons; and the changes of its weather were referred chiefly to the difference in the prevailing winds. Among a series of interesting remarks on the climate and diseases of New York, made by Lieutenant-governor Colden, about seventy years ago, and inserted in the *American Medical and Philosophical Register*, vol. 1., this medical philosopher observes; “The air of the country being almost always clear, and its spring strong, we have few consumptions, or diseases of the lungs.” “People inclined to be consumptive in England, are often perfectly cured by our fine air; but if there be ulcers formed they die. The climate grows every day better, as the country is cleared of the woods; and more healthy, as all the people that have lived long here testify. This has even been sensible to me, though I have been but about twelve years in this

country; *I, therefore, doubt not but it will, in time, become one of the most agreeable and healthy climates on the face of the earth.* As it is at present, I prefer it to the climate of England, and, I believe, most people that have lived any considerable time here, and have returned to England, will confirm this."

"If the climate of New York was formerly thus mild and healthy, and a constant amelioration in its temperature is consequent upon our numerous settlements and improvements, as has been maintained by many distinguished writers, to what shall we ascribe the extraordinary mortality occasioned by pulmonary consumption at the present day. None will deny this disorder to be influenced by climate, and independent of effects arising from particular employments, and modes of living; but we will, perhaps, find the most satisfactory answer to this question, in considering phthisis in its various forms as the offspring rather of increased dissipation, of great imprudence in dress, and of consequent exposure to sudden changes of temperature, than of any peculiarity in our climate and seasons."\*

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SINCE writing note 18, I have received a letter from Dr. Gerard Dayers, formerly surgeon's mate of the United States, when I was surgeon of that ship. It enables me to add the case of a favourable termination of a wound into the ca-

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\* Note N. N. p. 150.

vity of the lungs, which I would have related in that note, but could not at that time assert positively the favourable nature of the result. I however will subjoin it in this place, though not immediately connected with the preceding matter. I was called while on shore, to see a man by the name of Tindell, then one of the United States' boat's crew. He had been wounded in three or four places by a pretty large *couteau-de-chasse*, in an affray with a Portuguese sailor. I found him lying on his left side in Dr. Balfour's shop in Norfolk, whither he had been carried by some of his companions. Upon examination of his wounds, I perceived that the severest perforated the left lobe of the lungs. Through this wound he was bleeding freely, and also expectorating blood. After taking a good deal of blood from his arm, I had him removed to comfortable quarters in Water street, where I again bled him in the evening and very largely on the following morning. He was kept exceedingly low for the space perhaps of ten days, and as I was about to sail in another ship for France, I left him with the most favourable symptoms in the care of one of my mates, who from his experience and knowledge was well able to give him every judicious and necessary assistance. I accordingly sailed the next day, and heard no more after my return, of the particulars of his fate, than that he had recovered. The case excited considerable interest among the physicians of Norfolk, from whom I frequently had inquiries respecting his condition; it must therefore be well known to those gentlemen, as I am sure it is to commodore Decatur, and the officers of his ship. The following is a brief account of this man's case, after I left him in the hands of Dr. Dayers, (now surgeon of the Congress,) from a late letter received from that gentleman.

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“ U. S. Frigate Congress, Portsmouth, N. H.,  
March 7th, 1815.

\* \* \* \* “ As respects the surgical case, I lost all my books, notes, &c. at the time the English made an attack on the U. S. ship Adams at Hampden in Maine, but as far as memory will assist me, I will give you the symptoms and mode of treatment.

“ In the case of Tindell, who was wounded in the lungs by a sword, the breathing was very much obstructed, there was bloody expectoration, &c.; he was bled once after he came under my care: in conjunction with this important remedy, he was kept perfectly at rest, cooling laxatives were administered, and a low diet observed. Under this treatment he got perfectly well, since then I have heard nothing of him.

“ I hope you will pardon the concise account that I have given you; but what I have mentioned is strictly so, as far as my recollection serves me. The treatment previous to his coming under my particular care, I have very little knowledge of: but I suppose you have, as you attended him for a short time.

“ Yours, with great esteem,

“ GERARD DAYERS.”

The instrument by which the wound just related was made, fell into my hands. It was at least one inch broad, and very thick on the back edge, at the point up to which it must have been thrust into the body. The perfect and speedy recovery of this man, is another convincing proof that violent wounds may be made into the lungs, without inducing pulmonary consumption, or any other material injury.



## SECTION III.

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Of the causes of Hypochondria, especially its origin from the effects of climate, diet, and mode of life. Its various symptoms. Its connection with the hæmorrhoidal flux and its affinity to this disease, deduced from the similarity of its causes. The general absence of any præternatural appearances in the dissection of the dead bodies of hypochondriacks. Sometimes turgescence in the mesenterick veins observable. The different remedies for this disease. The beneficial effects of riding on horseback, especially when conjoined with a change of climate.

**HYPPOCHONDRIA** is well known to all physicians, for there is not any chronick disease scarcely, of more frequent occurrence than this, at least in the island of great Britain. Various, and indeed innumerable symptoms, both of mind and body, accompany this complaint. But especially a lassitude and torpor of the whole system, depression of spirits, fear, and anxiety, together with a derangement of the functions of the stomach and intestines. This diversified disease appears to originate from the effects of our climate; for it is most frequent in cold moist countries; while in those that are temperate or warm, it is either very rare, or altogether unknown. It is ob-

served also, that the hypochondriack are much better in summer than in winter. Hence it is probable that the disease might be relieved or cured by a change of climate. Indeed it is difficult and perhaps impossible to assign a satisfactory and accurate reason for all the symptoms which occur in this disease. For many have a connexion with nervous affections, the nature of which is not sufficiently investigated to enable us to understand the complaint. Many depend on a certain incomprehensible sympathy, which exists between the different parts of the system, and between the mind and the body. But this sympathy is veiled in the darkest obscurity. Such symptoms, therefore, I shall not attempt to explain. I shall endeavour only to investigate the sensible causes of the disease, both proximate and remote; and to show from them and from analogy of the effects of such things as do harm or good, how the complaint may be cured by a change of climate, or at least that it can be rendered milder.

It can scarcely be doubted that the proximate cause of this disease exists in the alimentary canal; for the most of the symptoms by which hypochondriacks are troubled, evidently arise from the disturbed functions of the stomach and intestines. Such

as, anorexia, nausea, vomiting, eructation, rumination, cardialgia, gastrodynia, flatulency, tormina, sometimes diarrhœa, but oftener costiveness of the bowels. All these are to be attributed, without doubt, to debility or want of tone in the alimentary canal. The affections of the mind too, which constitute so considerable a portion of this complaint at least in most cases, are clearly produced by the same weakness of the stomach and intestines; although sometimes, the affections of the mind are observed to bring on debility of the stomach and intestines, and true hypochondria.

A very difficult question now presents itself: if certain affections of the mind arise from weakness of the intestines, how happens it, that the debility often occurs, without such mental disorders? For there are many instances where the sick are distressingly troubled with all the diseases of the stomach and intestines which happen to hypochondriacks, while the mind is in no way affected. I confess my inability to solve this difficulty: indeed I doubt whether it can be explained until the reciprocal action of the mind and body upon each other, is more accurately investigated. It has never been properly

understood, how the diseases of the stomach affect the mind; it is hardly to be expected therefore that a reason can be given why this should happen only in some cases. Perhaps a peculiar disposition in the nervous system, or in the mind itself is necessary, in order that those affections may be produced. What this disposition is, I confess I do not know. Yet it is evident that the affections of the mind often depend on the morbid state of the stomach and intestines; since it generally happens that when this diseased condition is removed, the mind is restored to its former healthiness.

We have said that the disease, or rather the cause of the diseases of the intestines is debility, or want of tone. Many reasons confirm this opinion. Those symptoms above enumerated, evidently indicate a debility of the stomach and intestines; a weakness of the whole system accompanies the disease, and not unfrequently appears to produce it; many causes which debilitate the whole body, but especially the intestines, often bring on the disease; and whatever invigorates the intestines or the general system, is beneficial to hypochondriacks. But besides these, if I am not mistaken, another evil often exists in

the system, which increases the debility and want of tone in the alimentary canal, as well as the hypochondria, and perhaps also it might bring on the disease; namely, a tardy circulation of the blood, and also congestion in the abdomen. If a free and natural distribution of blood is necessary for sustaining the health and strength of the whole system, or any of its parts, it may easily be credited that from an impeded motion of this fluid in the abdominal viscera, the intestines would receive such an injury, that they would be rendered liable to various disorders. Or, if they should already have been debilitated and diseased, and the distribution of the blood disturbed, it is probable that the injury would fall especially on them. Finally, it is evident that if the circulation of the blood should languish in consequence of a want of exercise, or from other causes, although it would affect the whole system, yet the evils arising from it would be particularly felt in the abdomen; for the motion of the venous blood is naturally most slow there, on account of the long circuit it makes through the liver before it returns to the heart.

This opinion, that hypochondria arises from a tardy circulation and also congestion of the blood in the abdomen, is by no means inconsistent with reason,

and we shall now see how it is confirmed by observation of the remote causes of the disease, and those things which are beneficial or hurtful to the hypochondriack.

The different causes which bring on hypochondria, are observed to injure directly and immediately, the stomach and intestines. Others again impede in the first place the motion of the fluids, and debilitate in this way perhaps, the abdominal viscera, and in our opinion cause hypochondria. Some indeed, have evidently both those effects. We have said that a cold moist climate, like that which occurs in our northern countries, especially in the winter season, produces a disposition to hypochondria. The most manifest effect of such a climate is, to check the perspiration and hinder the distribution of the fluids to the surface of the body. Hence internal congestion is to be feared. I do not intend to deny, that a cold and humid climate can directly affect the stomach and nervous system, and finally the mind itself, even if it should not disturb the motion of the fluids. It is known that moist air relaxes and weakens the muscular fibres of the whole body. It is not surprising therefore, that the stomach and intestines should suffer from the same effects. The inhabitants of damp



cold countries are languid, inactive, and inclined to melancholy; for that reason perhaps, they are liable to this disease. Nor is it unreasonable to attribute this distressing disposition of mind and body to obstructed perspiration. For Sanctorius has declared in his established aphorisms, that cheerfulness of mind is produced during a very free perspiration by the surface of the body; and on the other hand, that a sense of heaviness in the body and sadness of mind is perceived when the perspiration is obstructed. Almost all persons, however healthy and robust they may be, and free from the hypochondriack disease, observe the most evident effects both on the mind and body, to follow different changes of the weather. When it is temperate, dry and clear, the body receives new strength and activity, and the mind increased cheerfulness. But on the other hand, when the atmosphere is cold, humid, cloudy and dark, the body becomes weak and languid, and the mind dull and gloomy. These differences are perhaps to be attributed to the effects of climate on the nervous system; for there is no doubt but that it does exert powerful effects in this way. But if I be not mistaken, the greatest part of these differences in the feelings is to be ascribed to the disturbed distribution of the fluids;

for if this is properly promoted by a due degree of exercise, neither sadness of mind nor lassitude of body is for the most part produced by the effects of a cold moist climate upon the nervous system.

Another, and indeed the most frequent cause of this complaint, is an indolent and sedentary life. Most men devoted to study, or occupied with other business, which requires a continual and close application of the mind, and hardly any exercise of body, are more or less troubled with this disorder. This kind of life can do harm in two ways, and produce a disposition to hypochondria: in the first place, a sluggish motion of the blood is produced by it, in consequence of a want of natural exercise: for physicians know, that the action of the muscles is necessary, in order to promote duly the circulation of the blood. Hence also perspiration and a determination to the surface is diminished; consequently plethora is produced in the system; congestion in the internal parts; and we have already shown that the evils arising from this source would especially affect the abdomen in this period of life. Besides, when the muscles are not properly exercised, they soon lose their former and natural strength, the moving powers

in a sedentary life, necessarily languish; and the whole body becomes debilitated; hence perhaps the stomach and intestines, by sympathy or consent, derive a similar debility or want of tone. But my opinion is, that hypochondria arising from a sedentary life, is rather to be attributed to an obstructed distribution of the fluids to external parts, than to a weakness and want of tone in the muscles; though this want of tone may doubtless increase the evil. For in warm countries, where the perspiration and determination to the surface is sufficiently promoted by the heat of the air alone, hypochondria rarely occurs, although debility and want of tone are common enough, and the inhabitants do not use much exercise.

Certain affections of the mind which we call depressing passions, especially grief, and continual and distressing anxiety, often cause hypochondria. But it is well known, that all serious affections of the mind affect the stomach in some degree, and vice versa, the mind is disturbed by the different diseases of the stomach. For it has been observed, that sadness of mind, and other effects of this nature, not only debilitate in a surprising manner the stomach

and whole body, but also greatly obstruct perspiration. When therefore, the motion of the blood becomes languid, and the determination to the surface is in this manner diverted, and the stomach and intestines from their consent with the mind are debilitated by the same cause: is it not probable that congestion in the abdominal vicera will succeed that debility, and would be the cause of hypochondria following?

Many causes in fact produce this disease, by debilitating the stomach, the intestines, and the general system, which do not appear directly or particularly to affect the distribution of the fluids. Such are large, and especially slow evacuations, the menstrual flux, fluor albus, sometimes excessive venery: these give rise to a debility of the whole system. Other causes particularly weaken the stomach and intestines: such are the excessive use of tea, tobacco or opium, and of other narcoticks; or the frequent repetition of the more powerful emeticks and catharticks, diarrhœa or continual binding of the bowels.

Other causes however, which produce hypochondria or at least a disposition to it, evidently appear to

cause a sluggish motion and congestion of blood in the abdomen. Plethora without doubt in many cases contributes not a little to produce this disease. For men who use a full and generous diet, and lead an indolent and sedentary life, are very much inclined to hypochondria, and it can hardly be doubted but that a plethorick state may exist in the system of such persons, and may create the greatest part of the disorder; especially when we consider the remedies which give relief to such patients. For a lighter and more spare diet, or one consisting of fruits; frequent and constant exercise, and sometimes the loss of blood,—greatly relieve them; and all these evidently and directly diminish or remove plethora. We have before explained why plethora, if any exists in the system, particularly shows itself in the abdomen. For hypochondria only occurs in advanced age: in infancy it is altogether unknown; it is most frequently met with after the thirtieth or thirty-fifth year.

The disease also not unfrequently arises from those tumours in the spleen or liver, which are sometimes observed after intermittents that have been imperfectly cured. Tumours of this kind evidently



obstruct the free motion of the blood in the abdomen, and consequently produce congestion.

It arises too, and not rarely, from a hæmorrhagick disposition, when the hæmorrhages have ceased. It appears from observations that those who have had hæmorrhages, are greatly inclined to this disease. Those who have had the hæmorrhoidal flux checked, are particularly liable to hypochondria. And from this source hypochondria often arises. It appears evident to every one that a suppression of that flux, produces a congestion of blood in the abdomen. There is a very remarkable connexion between hypochondria and the hæmorrhoidal flux: the same age; the same climate and season of the year; the same mode of living; as for instance a full and gross diet, and an indolent and sedentary life, a plethorick habit, a hæmorrhagick disposition, and costiveness of the bowels,—equally induce both. They occur not unfrequently in the same patient, and occasionally at the same time; and hypochondria is often produced by a suppression of the hæmorrhoidal flux; when that is restored, this in its turn is released. But the hæmorrhoidal flux arises without doubt from congestion of blood in the abdomen: from this fact there-



fore, another argument arises which tends to prove that at least in many cases, hypochondria derives its origin from the same source.

Nothing of consequence can be learned on this subject by dissecting dead bodies; for hypochondria, however troublesome and difficult of cure it may be, and notwithstanding it distressingly torments many persons during the greatest part of life, yet it is scarcely ever fatal, unless sometimes when it brings on other diseases, as dropsy for example, or a cachectick state of the system. In some of the dead bodies of hypochondriacks however, a congestion of blood has been plainly observed in the mesenterick veins.

There is every reason I am persuaded, to deduce two principal causes of hypochondria, viz. a debility and want of tone in the stomach and intestines, and a congestion of blood in the abdomen. The mode of curing the disease then, according to this theory, renders it necessary, before attempting any thing else, to invigorate the stomach and intestines, remove the congestion of blood from the abdomen, and promote the free motion and distribution of this fluid. To the first intention, many remedies are adapted; and often

not a little benefit is derived from tonick medicines, either taken internally or otherwise applied. Of this kind are the Peruvian bark, steel, bitters, the cold bath. But these remedies rarely effect a perfect cure of the disease, unless others are at the same time exhibited, which answer the other intention of cure, namely, to restore the due motion and distribution of the fluids. Now this is best effected by exercise in the warm air, especially by riding on horseback, than which nothing gives greater relief to those labouring under hypochondria. The commendations which Sydenham has bestowed upon the exercise of riding on horseback, as a cure for consumption, might perhaps be more properly applied to the hypochondria. It does not only effect a due distribution of the fluids,—promote the motion of the blood to the smallest vessels of extreme parts,—afford activity to the moving powers of the system and to the whole body,—but especially benefits the stomach and the other abdominal viscera. No other kind of exercise affords such concussion, by which the circulation of the blood in the abdomen is equally promoted, and it thus seems to increase the peristaltick motion and strength of the intestines. Hence all the excretions of the fluids which are so essentially useful for the

digestion of food, are promoted, and the nutriment is properly and perfectly concocted. The intestines being rendered healthy in this way, the mind by its peculiar sympathy with the stomach, receives its accustomed activity and cheerfulness.

This important remedy is rendered still more efficacious when conjoined to a change of climate. We have already said enough with regard to the effects of a moderately warm climate, in promoting the due distribution of the fluids, which we have endeavoured to prove, is of the greatest utility also in hypochondria. But since this disease affects the mind in a great degree, and often derives its origin from it, it is evident, that a temperate and pleasant climate, and indeed a change of place itself, would be exceedingly useful to the sick. A finer climate than that of our own country, gayer manners, new and pleasant scenes, all occupy the mind agreeably, and delightfully divert the imagination. By these means also, when the disease has but just begun to affect the mind, the patient would experience the greatest relief by reason of the sympathy that exists between the mind and the abdominal viscera.

But a change of place and the journey itself, besides the benefit arising from long continued exercise, produce other most powerful effects. A certain connexion exists between distance and time, estimated by the remarkable incidents of our life, which exerts happy effects on the mind. Travelling (from the number of interesting occurrences that happen almost daily) produces similar effects, and causes an oblivion of our sorrows, just as the lapse of years produces sooner or later relief to all diseased or melancholy minds. Distance from our home, also, removes every thing from our view, which might recall to the imagination the past sorrows of the mind. Those little troubles too, which arise from domestick concerns, and which often solicit too much attention from hypochondriacks, are thus far removed from their sight.

Finally, that lazy disposition in which hypochondriacks indulge at home, is necessarily banished in travelling. Inactivity and gloominess of mind constitute the greatest part of this disease: whatever therefore engages the attention, would, it is evident, be very useful; and all exertions of the mind,

although forced and irksome at first, occupy its attention, and serve to introduce a new train of ideas.

By these means the mind is gradually restored to its wonted cheerfulness, the intestines take on their former healthy action<sup>23</sup>, and each reciprocally imparts its proper vigour.

<sup>23</sup> The new and healthy change produced in the morbid state of the stomach and intestines, which occurs in the distressing disease of hypochondria, is undoubtedly one of the most efficient and potent effects of travelling, as a remedy for this complaint. In hypochondria, Dr. Gregory has pretermitted any mention of a sea-voyage, and wisely indeed has he done so. I have heard of this means of changing place and scene, recommended in this complaint, than which no advice could be more irrational and disastrous. It is somewhat remarkable that an exercise so efficacious as that derived from a sea-voyage, in many other complaints, should not prove equally beneficial in all where a change of place is proper. But it can only be attributed to the mental uneasiness I have before mentioned (note 15), produced by the tumultuous vexations of a sea life, combined with the want of other comforts, as cleanliness of person, and changes of dress, which are the inevitable concomitants of a voyage, particularly of a long one. A change of dress may seem a matter of trivial importance; but in hypochondria it is far from being so; and I well know from actual observation that this disease, which



as I shall presently say, is common on ship-board, is always benefited for a time, by a change of dress. This disorder is generated by the monotony of a sea life, and generally affects landmen and those whose habitual occupations of reading or amusement on shore, are interrupted or entirely prevented, by the noisy din of a ship. I never failed to observe such persons better after muster on a Sunday morning, when the regulations of the ship compelled every one on board to pass inspection, in a clean and fresh attire. But a sea-voyage, if it exceeds a day or two, must be injurious to hypochondriacks for the reasons I have mentioned. As the effect of travelling on the bowels, in producing a new and healthy action in them, has just been mentioned, it may here not be amiss to take notice of some of those affections of them, which are generated by particular climates, and which consequently we may reasonably hope to cure, by flying from the place where they received existence.

In all cases of disorder of the intestines depending on an undue secretion of bile, or on a deficiency of this secretion, or an unhealthy state of it, a change of climate by means of a sea-voyage, may undoubtedly be expected to do good. "Sea-sickness, and a sea-voyage," says an able writer, "contribute very much to restore the secretion of healthy bile, so necessary to the welfare of the animal economy; and symptoms of dyspepsia and diminished secretion, which are now rendered more conspicuous among females from their sedentary life, are most effectually removed by the means already suggest-



ed.”\* It is however, only in cases where these affections, as just specified, are unconnected with any mental uneasiness such as occurs in hypochondria, that any reasonable dependence can be placed on a sea-voyage. I am the more inclined to this opinion, because I have seen decided inconveniences, nay bad consequences, arising from the influence of a sea life on hypochondriacks; chiefly because it aggravates a prominent symptom of this disease, viz. costiveness.

It is well known that the inhabitants of hot countries, are liable to many diseases which have their sole origin in the derangement of the functions of the liver, produced by the heat of the air. The most common of these, are the complaints generated by the increased secretion of bile, either causing a regurgitation of it to the stomach, or an excessive determination of it to the *primæ viæ*. Hence obstinate dysenteries and diarrhœas arise, which becoming, as they very frequently do, chronick—produce a state of general ill health, and a perpetual want of tone in the stomach and intestines. Such a situation calls for a change of climate. By means of this, the superabundant secretion of the bile is reduced to the healthy and requisite portion, its activity on the alimentary system consequently very much lessened, and the wonted vigour of the stomach reproduced. With the healthiness of this organ, the intestines receive a simultaneous invigoration, and the evils arising from the disturbed functions of both, are speedily and effectually banished from the system. The disorders above enumerated, as they are engendered by a warm

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\* Saunders on the Liver, duodec. p. 148.

climate, require a change to a colder region; and this change effected by means of a sea-voyage, effectually restores the constitution to health and perhaps to vigour—provided indeed the hot climate had not made such pernicious inroads on the system, as to leave the liver and abdominal viscera in a radically unsound condition. The practice of seeking relief for violent affections of the viscera of the abdomen, produced by the vices of particular climes, is of very old date; hence we are told that the ancient Carribean Indians, who were subject to palsy in consequence of the violent convulsive cholicks common to all the natives of the torrid zone, had themselves conveyed to countries colder than their own, when they could not resort to the hot baths in the northern parts of Jamaica; and this change of climate was always followed by the most beneficial effects.\* The present professor of the practice of physick in this university, says in his lectures, that he has known diarrhœas of the West Indies cured by the patient's coming to the United States.

Besides the use of a change of climate in the disorders of the bowels, produced by an intensely warm climate: we may safely recommend such change in the obstinate affections to which they are liable in our own country. On the authority of the professor just mentioned, I may state, that obstinate chronick diarrhœas contracted in the United States, have been perfectly cured by a voyage to the West Indies.

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\* Neale on Consumption, p. 205.

In cholera infantum we know it to be the common practice of physicians, to send the little patients into the country, and this is not unfrequently done, with scarcely a ray of hope either in the minds of the parent or physician, that a recovery will be the consequence; and yet a few weeks, and not unfrequently a few days only, have been known to snatch the patient from the jaws of death as it were. In this disease the sea-air seems peculiarly favourable. In proof of this; professor Barton says that it is a very common and mortal complaint, in the town of Dover, in Delaware; while in the town of Lewis in the same state, but on the very borders of it, and exposed to the constant influence of sea-air,—it is altogether unknown. All these facts prove, that a change of climate is highly beneficial in the disorders of the bowels; to which I may add that I have seen unequivocal advantages arising from a sea voyage, in all the chronick affections of the intestines to which seamen are so liable from the frequent changes in their diet.

## SECTION IV.

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Of Gout.—Of the effects of a cold and humid climate on arthritick constitutions, and the general inefficacy of the remedies used in this disease.—The advantage of a change of climate over all other remedies in this complaint, particularly from a cold to a warm one, deduced from the effects of travelling and warm air, in promoting a free and healthy determination of the fluids to the skin, especially in old persons.—Also the beneficial effects of a mild climate on the disorders of the stomach, so intimately connected and almost always combined with gout.—Arguments in favour of a change of climate in gout, inferred from a consideration of the remote causes of the disease.—Of its effects in averting the ill consequences of repressed gout, which generally succeed the use of other remedies.

A FEW observations will be made on the subject of gout, not only because we are of opinion that this disease is to be ascribed to the effects of climate, nor because we expect that a change of climate alone, without the use of other remedies, will perform a perfect cure: but, on account of the variety of reasons which incline us to the opinion, that our cold, humid and variable climate is extremely hurtful to gouty persons, and, on the contrary, that warmer

countries would often be of the greatest service to them. All physicians confess that but a small number of remedies are truly useful in this disease; scarcely any that can radically extirpate it, and few that can assuage the agony of its miserable victims. Of those too, which hold forth the prospect of relieving pain or curing the disease, some become so unpleasant to the patients, that they are soon rejected. Few men are endowed with sufficient fortitude to be willing to persist for any length of time, in the use of disagreeable medicines, especially if they be not administered during the actual existence of the violent paroxysms, but only given during the intervals of the disease, when the patient experiences neither inconveniences, nor pains, nor sickness. All physicians agree, that frequent and powerful exercise and slender diet, are the only remedies by which the cure of gout can be safely looked for. But the sick universally reprobate remedies of this nature; nor can they so far overcome the force of habit, as to consent to be cured of their disorder on such conditions. But the disease evidently deprives many persons of the use of the limbs, so that exercise is rendered impossible; while others, on account of their debilitated state, or from other causes, absolutely

stand in need of a generous diet. A pleasant, efficacious and safe remedy for this disease, is therefore an important desideratum; and I entertain the greatest hopes that a warm climate is gifted with these advantages. There are some remedies indeed which mitigate, for a short time, the excruciating pains of gout, and others which seem to drive the disease from the whole system; but they are often observed to bring upon the wretched patients, new and more distressing disorders, or even death itself. Of this kind are the various remedies applied to the pained parts, especially discutients, or cold, or such as are composed of spirit of wine and the like; certain medicines also, taken into the stomach, and particularly aromatics and bitters, such as compose the Portland powder. Since therefore, gout not unfrequently acts in some way as a remedy for other and more afflicting diseases, it surely ought not to be cured, without we could at the same time prevent the evils which usually arise from repressed gout: and this too is best effected by a change of climate.

It is not my intention to treat fully and particularly of gout: it will be sufficient to show the usefulness of a change of climate, by noticing some of the



remote causes of the disease, and from our experience of those things which are beneficial or hurtful. I am not able to draw any conclusion of this nature from the proximate cause of the disorder, since it is so very obscure. Some of the remote causes indeed, are scarcely better understood, and particularly the predisposition, strictly called, or the germ of the disease. Something of this kind exists we well know; for the most of the remote causes, either predisposing or occasional, produce gout only in some persons, while in others they have not the effect of generating any disease at all, or one of an entirely different nature. But the nature of that predisposition or the seeds of the disease which are transmitted from parents to their offspring, remains as yet in obscurity. We must seek in other sources of reasoning then, further exposition. The other predisposing causes are, particularly, advanced age, too full a habit of body, with corpulency, plethora, rich living, drunkenness, premature and immoderate venery, and above all, an indolent and sedentary life. With respect to the occasional or exciting causes, there is no occasion to say much. I can hardly believe that gout is ever produced by any sudden or violent cause, unless a strong disposition to it had previously existed

in the system; and, when that disposition does exist, the disease generally recurs periodically without any evident exciting cause. Sometimes indeed a paroxysm is brought on by powerful affections of the mind, (though not unfrequently it is banished by the same); sometimes the infliction of external violence, particularly on the lower limbs, a sprain, or fatigue; occasionally, an omission of an accustomed exercise, or a suppression of a customary evacuation; often improper food, gluttony, a surfeit, and whatever produces indigestion and acidity in the stomach. For it is well known that affections of this kind, are almost always the precursors of a paroxysm of gout.

But besides this, the exciting causes, and perhaps also the predisposing, often arise from the state of the air. Regular gout, which, when it has begun, generally recurs about the same time of the year: afflicts the patient first in the spring; for the most part in the end of January or beginning of February; never in summer time, unless from some sudden and violent exciting cause. After the disease has advanced, when the patient suffers two paroxysms during the year, one happens in the spring and the other in the autumn: but in summer the patient is entirely

exempt from the complaint. Finally, in those cases when the patient is so very severely afflicted, as to lose the use of his limbs, and is confined to bed for a considerable portion of the year, he derives the greatest relief from the summer season. Those excruciating pains which medicine can scarcely touch, are always greatly relieved by the provision of nature, and generally cease altogether during these three or four months of the year. Reasoning from this fact, a change of climate promises the highest advantages in this disease.

Cold air is doubtless injurious to gouty persons; for they carefully cover the parts particularly affected with the disease, and derive some relief from this practice. The most judicious physicians indeed do not permit any other remedy to be applied to the pained limb, than woollen cloth, or something of a similar kind. It is agreed too that sudden application of cold to the body, not unfrequently brings on a gouty paroxysm. And gouty persons frequently feel slight arthritick pains when any degree of cold is applied to the feet. Physicians well know also, that a checking of the customary sweat or perspiration of the feet, is often the forerunner of a gouty pa-

roxysm. Slight paroxysms too, which produce severer ones, are dissipated by gentle bathing of the feet or sometimes of the whole body. Hence therefore, it is very probable that suppressed perspiration is injurious to the gouty patients, while a free discharge by the skin is beneficial. In spring and in autumn when the weather is very variable, the disease is greatly aggravated; and in summer, as we have before remarked, it ceases. To avoid therefore the remote causes, either predisposing or occasional, arising from the air, a change of climate is strenuously to be recommended. We shall now notice in what way a favourable climate promises to overcome the other remote causes.

Disorders of the stomach almost always precede a paroxysm of gout, and indeed afflict most gouty persons, and constitute a great part of the disease. When speaking of hypochondria we remarked that warm climates are not much disposed to produce these diseases, and indeed with us they occur rarely in the summer season. To whatever causes therefore that relief of the diseases of the stomach which arises from a mild atmosphere, is to be ascribed; whether to its direct action on the nervous system or to its

effects in promoting and distributing the fluids—it is evident that a change of climate is of the greatest advantage in those affections—and as they are cured or relieved, it is reasonable to expect, that gout would derive infinite benefit from the same sources.

Gout, as we have before observed, generally attacks those who have passed the prime of life, that is, who have reached the thirtieth or thirty-fifth year of age. In infancy it is almost altogether unknown, and in boyhood is exceedingly rare: But in more advanced age the perspiration is sensibly diminished; for many minute vessels and cutaneous pores, are contracted in process of time, and coalesce. Old men generally neglect to take their accustomed and necessary exercise, for the pristine activity of mind and body are then wanting; and they are often engaged in sedentary employments. In such men therefore, travelling into warm countries, if I am not mistaken, would prove very successful, and restore the distribution to the surface and the excretion by the skin, and perhaps might in this way relieve this disease.

Gout generally attacks those who indulge in high living, and are given to the excessive use of wine



and other spiritous liquors. To these therefore, above all other men, we believe that the freest perspiration by the skin is necessary; for a certain equilibrium between what is taken in and passed out of the system, is required for health. Now this balance is evidently disturbed, if any one uses too full a diet, and leads an indolent and sedentary life. Experience satisfactorily shows, that various diseases are produced by this cause, and especially gout. Men who use a temperate and light diet, although they may lead an inactive life, are rarely attacked by gout: and those who use powerful and frequent exercise, especially those who get an appetite by hard and continual labour, although they daily consume a great quantity of gross food, nay, and indulge in spiritous liquors—are rarely troubled with this complaint. There are some examples even, of men having suffered hereditary gout (which is generally esteemed the worst, and the most difficult of cure) for many years, being reduced to poverty, and obliged to seek a livelihood by hard labour—have been entirely cured. Examples of this kind very clearly show of how much importance it is for relieving or curing this disease, that the freest determination of the fluids to the surface of the body should be promoted. I



am by no means ignorant, that another and altogether different reason might be given on this subject, and attributed to the benefit received by exercise and its effects on the solid parts. Exercise without doubt not only promotes a free distribution of the fluids, but also procures strength and vigour to the muscles and the general constitution, preserves and increases it. I will not contend that exercise would not in this way be beneficial to the gouty, especially to those already broken and debilitated by the disease.

But there are arguments arising from the history of the disease, and from analogy of those things that are useful, which show that the benefit derived from exercise is to be attributed at least in a great measure, to its effects in promoting a due distribution of the fluids. From what has been said above, if I be not mistaken, it plainly appears—that obstructed perspiration is very hurtful to the gouty. And the different things which relieve these patients, can hardly act in any other way, than by promoting the perspiration and due distribution to the surface. Of this kind are plentiful and warm clothing, especially to the pained parts, from which almost all gouty per-

sons experience relief: also the tepid and even the hot bath, and frequent and powerful frictions, from which many derive the greatest assistance; and some, very much broken by the disease, have recovered the use of their limbs which they had almost lost. There is no occasion to repeat what has already been said respecting the benefit accruing in this dreadful disease, from the summer heat. It may be reasonably collected from all these facts, as it seems to me, that a free perspiration is especially necessary in curing this disease; and we have before proved, that a climate moderately warm, eminently effects that purpose, because the sick, however greatly broken down and debilitated, can receive the advantage of it as long as they please without danger or detriment. I would therefore recommend a change of climate to the gouty, for these reasons particularly: that all the injury which arises from our winter, may be avoided, and the advantage, whatever it may be, which the summer season affords, might be continued, and so that the perspiration and due determination of the fluids to the surface, might be promoted; or if it should have been checked, so that it might be restored.

Another argument may be added to these, and though it is an uncertain one, and does not appear at all accurate, yet I do not think on that account that it is irrelevant. We have before observed that the seeds of gout exist in the constitution of some persons; but since the nature of this predisposition as yet is concealed, it can hardly be expected that a powerful remedy will be found by which it can be corrected or extirpated. "For since in this disease (as Sydenham has judiciously mentioned) its cause exerts such an influence over the constitution as to render its very nature, new as it were, no rational being could suppose that a slight or temporary alteration either produced by medicines, or by a particular diet, could produce a radical cure; but the general habit of body must be brought into a different condition, and the entire man as it were subsequently re-organized." But if the condition of the system is entirely or almost entirely changed, it is not improbable that the peculiar disposition would be altered or corrected. It is known, that certain changes which the constitution undergoes, bring that disposition into view: for in the state of infancy or boyhood, it rarely shows itself; while the disease generally makes its attacks in manhood. The constitution therefore

undergoes in that age, certain changes favourable to this disposition. Therefore we might hope that other changes would be able to expel or correct a gouty disposition. Now the constitution of the system is most altered by a change of climate: and experience plainly shows that travelling into warm countries would be not only safe in this disease, but even very useful and pleasant to the patients.

There is a very remarkable case, and very apposite to these observations, which the celebrated Van Swieten has mentioned in his Commentaries, of a man who in the thirty-first year of his age, laboured severely under gout, and lost almost entirely the use of his hands and feet. In this condition he took a voyage to the East Indies, with a view to derive benefit from the climate. He returned to his native country after a lapse of three years, and in consequence of the heat of the air, without the use of any other remedies, he lived healthy and perfectly free from gout.

A similar case is related by the illustrious Haller, of Lord de Poincy, who when an old man, and already severely afflicted with gout, went to the warm islands of America, where he lived many years with

the effect of being freed from gout and all the other evils of old age, and recovered his former health.

A case similar to this I received from a very learned physician, who often saw the patient while he lived abroad. A nobleman laboured for many years under gout, until at length the disease so much increased, that he was grievously afflicted the greatest part of the year. The patient had used many remedies without effect. He lived for a long time on a diet of milk alone. The disease however daily grew worse. He made a journey into Italy, where in a short time he had a most severe paroxysm, (though of short duration). Afterwards, however, he lived free from the disease, and still lives after many years. It must be observed, that this patient remained only two years in Italy, and while he staid there he indulged in a somewhat more generous diet than before.

## SECTION V.

Of invigorating old age.—The signs and effects of declining life in old persons, and the particular consequences of the depreciated functions of the system.—Reasons why a change of climate may be expected to relieve them, and produce a general invigoration of the fading body.—Of the injurious effect of a cold and humid climate upon old people, and the advantages to be derived from travelling to warm countries.

I MAY advance in this place, a few observations respecting the relief of old age, and protracting human life beyond its ordinary limits, by means of the influence of a change of climate. They will neither be useless nor foreign to the subject of this discourse. Some physicians of eminence suppose, that old age itself is a true disease, which can derive relief from our art. Others indeed, contend that old age is a natural and inevitable condition of life, and that therefore it can neither be relieved nor rendered a disease, by means of human art. It is not my intention to enter into a discussion of this question, for it would be both useless and impertinent to my subject, to



do so. Whether it be a disease, or a natural state, it is very certain that old age brings with it many inconveniences, renders the system liable to many disorders, evidently diminishes all the natural powers both of mind and body, and sooner or later brings on death itself. This state therefore, stands in great need of all the precautions and assistance that medicine can afford. For it is the province of physicians not only to cure diseases, but to maintain health, and as far as is allowed to mortals, to preserve and prolong life. The science of medicine would consequently be very imperfect, if it could not supply any remedies calculated to accomplish this end. Especially since there are some evil disposed persons, who contend that our healing art, sometimes shortens the span of human life.

I am not indeed acquainted with any remedies, which are endued with the power of making us young again: yet I do not at all doubt, that remedies might be found sufficiently efficacious to be able to ward off immediate old age, and to prolong life for some years beyond its natural bounds, as well as to keep the health and powers of the system but little impaired. But such a virtue cannot be expect-

ed from the use of medicine for a short time. To achieve such an effect on the system, it is not only necessary that an efficacious remedy should be employed, but that it should be long continued, and that the general constitution should undergo a proper and almost entire revolution.

In many cases, where the general system is contaminated by some vice, and is threatened with some serious danger, a change of the whole habit of body, often succeeds very happily. It is very well known to every one, that an intemperate or improper mode of life, often brings on a protracted state of ill health, and premature old age. Reason and experience therefore both prove, that a proper kind of life can prevent those inconveniences, maintain health, and retard the approach of old age, as well as protract life. How much a proper change in the mode of life conduces to this effect, Cornaro has very clearly evidenced. After having past his fortieth year, he felt that his constitution was in a manner broken down, and debilitated by his intemperate kind of life: he took leave of his former habits, led a sober and temperate life, recovered his pristine vigour, and com-

pleted his hundredth year, without the health of his body or the faculties of his mind being impaired.

We have before said that a change of climate produces powerful effects on the human body: and if a man should live sufficiently long under another sun, it is not improbable that his constitution would be entirely changed. Various are the arguments which influence me in adopting the opinion, that a change to a warm climate would be very useful to most old persons. No rational creature can suppose that a change of climate, or any other remedy, will banish old age forever, or that it could prolong human life to eternity, or even for a long series of years. I shall not promise so miraculous a remedy. But there are many who find their health broken, and their powers impaired, and who feel death close upon them, who would seize with the greatest eagerness a remedy, by which life could be extended only for a few years, and which might in some measure regenerate the languid and impaired powers of the system.

In our opinion, there are some obstacles to the long continuance of human life, in every part of the

globe; but if there be any difference, they are greater in our northern countries than in the regions of the torrid zone. But we have before remarked, that a warm climate produces much more powerful effects upon travellers, than upon men who live continually under its influence. If any one is continually accustomed to the useful remedy it affords, he evidently loses whatever degree of benefit might be expected from its operation. Nay, I could easily believe, that the immoderate use of this remedy, would not only do no good, but would, in many cases, prove very injurious. If any one of our inhabitants, healthy and robust, and in the bloom of life, was to seek more fervid climates, where he might live, his life would not only not be prolonged, but perhaps would be curtailed, and he would prepare for himself a premature old age—melancholy examples of this kind, are daily presented to our view. We should sedulously attend, respecting this remedy, to what Celsus formerly judiciously admonished, with regard to others; namely, that we should take care lest in our efforts to preserve health, its real interests were not destroyed by injurious cautions.

I shall endeavour therefore to show, what changes

occur in old age, the way in which our climate is pernicious to old persons, and the reason why travelling into warm countries should be recommended to them. I do not design to treat here of all the evils particularly, to which old age, in these northern countries, is subject, and which might be prevented, relieved or cured, by a change of climate. I intend to make some remarks only upon those changes and differences that are natural to old age, and which attack sooner or later the healthiest and most vigorous, break down and waste away the constitution, and finally sweep them from the busy scenes of life.

In the progress of years, the human body suffers various alterations which injure all the powers and natural functions of the system; consequently many inconveniences are brought upon the aged. These changes affect the whole system, and undermine and weaken it in every part; they especially affect the nervous system, blunt the understanding, diminish the strength and energy of the mind and body, render the solid parts stiff and hard, and greatly impede the motion and distribution of the fluids. All these evils evidently increase by degrees; yet it is very difficult to explain their beginning and origin, or to

detect which is the cause of the others. If we begin from the impeded distribution of the fluids, a question arises, why this is disturbed, if the solid parts and the moving powers remain sound, natural and entire? Or, if we begin from the induration and atony of solid parts, and especially of the arteries and muscles, it will be difficult to assign a reason why these have become indurated, and have lost their powers, if the distribution of the fluids is properly promoted, and the nervous energy not diminished. Finally, if we begin from a deficiency of the nervous power itself, (whence doubtless all the other evils spontaneously flow), we should explain, why this is deficient, if the motion of the blood and the rest of the functions of the animal machine are performed properly and in the usual manner. For the action of the heart and the nervous energy reciprocally support each other. It must therefore be acknowledged, that the human body is a circle, the beginning and the end of which are as yet concealed, and perhaps for a long time will continue unexplored. All things that are necessary to life and for the health and increase of the body, are not accurately understood; it can hardly be expected therefore that the cause of any default in them, should be nicely comprehended.



Yet we do know many things that are necessary to life and growth, and which support the strength and health of the body: we are acquainted too with many which are inimical to all these, which diminish the powers, destroy the health, waste the body, and pave the way for death itself. We know moreover that all these increase each other, so that the constitution is daily running into a worse condition.

But all the changes which arise from old age, may be reduced to three heads; to impaired nervous energy, and induration of the solid parts, and an obstruction of the free distribution of the fluids. Of each of these effects we shall now proceed to treat more particularly. The first signs which generally accompany and denote incipient old age, are observed to arise from impaired nervous power. All the senses both external and internal, by degrees are rendered more obtuse. Sight, hearing, smelling, taste, are sensibly deficient; hence most old persons dislike light and unadulterated food, which they before were fond of—and crave a more savoury, salt and high seasoned diet. The cheerfulness of youth gives way by degrees to the gravity of age. The strength and activity of the body, are also sensibly

diminished; hence most old men leave off all the more powerful exercises, and very willingly exchange the toil of business for a life of tranquillity and ease. Upon still more advanced age, the strength of the muscles is daily more and more diminished, until at length confirmed old age causes a loss of almost all the uses of the limbs. The faculties of the mind also by degrees waste away. The imagination is depressed, and memory totters; at first indeed, recent ideas easily escape it, although old ones which it formerly imbibed it very tenaciously retains. But afterwards all ideas, both old and recent, are dropt from the memory altogether, and then the judgment is destroyed.—The solid parts of the body become hard: the cellular texture is not only harder so as to resist the knife, but has obtained a greater power of adhering. Hence the skin, which in youth was soft, smooth, and equal, by degrees becomes hard, and rough. The numberless invisible pores are contracted, and altogether closed up; hence perspiration is obstructed, and the skin acquires a peculiar dryness. The arteries of old persons become thicker, more rigid, and even narrower, and many of the smaller ones are gradually closed up. The veins also acquire a greater thickness and strength

than in youth, but never in the same proportion as the arteries. Hence, from the greater resistance and diminished impetus, (to wit, by the moving powers being now impaired), the motion of the blood is slower; so that the veins of old persons become larger and not unfrequently varicose. From this cause also, and the diminished irritability of the heart, (from a defect of nervous energy), the pulses beat more slowly. The brain itself, the nerves, all the viscera—become indurated, so that the muscular fibres often become almost altogether converted into a very hard tendinous substance. This induration evidently arises from a deficiency of the fluids, which cannot now, as formerly, flow through the smallest vessels, by this time contracted and closed. The same reason might chiefly be given, for the debility of the muscles, and the decrease of the whole body, which are observed in old age: For however large, corpulent and robust bodies may be in the first stage of old age, they become in the last, inactive, and altogether debilitated. If the vessels which used to carry blood to any part, are contracted, or closed, so as to convey no blood, or but an inconsiderable quantity, it is evident that such part cannot be nourished as before; it is not surprising

therefore, that it pines away, and loses the powers which it formerly possessed. Besides, many vessels, and lacteal glands of the mesentery, are obliterated in extreme old age; and thence perhaps it is probable that a much less quantity of nutriment will be conveyed to the blood, from the same food.—With regard to the obstructed motion and distribution of the blood, there is no doubt. A defect of nervous energy in consequence of the debility of the moving parts, the greater resistance of the arterics, and from the constriction or choaking of innumerable minute vessels, and cutaneous pores,—it is evident that the blood does not flow freely through the whole body, as before. All, nearly, of the minute excretions, and some suppressed ones, the dryness and fading and hardness of the body, demonstrate the fact beyond the possibility of doubt. The perspiration in old persons is very much lessened, and often almost watery. Their bowels also are generally observed to be slow or inactive. Hence, according to many and very celebrated authors, an acrimony of the fluids is produced, from a retention of those parts which ought to be excreted and passed out. But the nature of this acrimony, so far as I know, is not accurately understood. I will not deny that many

disorders happen in the fluids of old persons: And from the deficiency of the other natural powers, which were wont to prepare properly the blood, it is not improbable, that it will become feeble or otherwise diseased. Old persons are sometimes liable to disease, evidently the consequence of a defect in the motion of the blood, namely, necrosis, or gangrene, which generally attacks first the feet, afterwards the legs, and induces though slow, yet certain death.

The reason therefore is plain, why our cold, moist, and variable climate is unfriendly to old people. In the first place it injures the nervous system, and diminishes the power and activity both of body and mind: Hence the due distribution of the fluids is impeded, and the atony and hardness of the solid parts increased. Moreover, cold and moist air (as we have already remarked) obstructs, directly and immediately, the perspiration, and the free determination to the surface. Cold also causes an induration and stiffness of the external skin, and the other solid parts. But all these things occur naturally to old persons, and when they do happen (as we have remarked above) they increase each other.

From the history of old age it may be gathered, that the evils which occur to it, especially require three things: namely, to sustain and nourish the nervous power, or, if it is already depreciated, to restore it: to prevent or remove an excessive hardness of the solid parts, and promote the due distribution of the blood. If all these things can be exactly accomplished as we would desire, there is no doubt but that the former vigour and complete youth would be restored. But if they are only partially achieved, the energy and power will be renovated in some measure, delay the immediate approach of old age, and perhaps prolong life for many years. I do not know any remedies which answer these intentions better than a change of climate, by travelling in warm countries.

Nor is it a matter of small importance that this remedy is both safe and pleasant at the same time, for all the evils of old age. We plainly see that all these disorders increase each other; yet we never know which one is the cause of the rest. It is of the greatest importance in curing any disease, that a remedy should be applied in the first place to its causes. But if to any of the evils to which old persons



are subject a remedy can be applied, it is but reasonable to expect that the general system would derive benefit from thence; in this way the powers of nature might be somewhat recruited, and the other evils of old age, might, in some measure, be relieved.

There is no occasion to say of how much use warm air is in exciting and nourishing the nervous energy. The healthiest and most robust, who stand in need of no such assistance, experience new activity both of mind and body, from this source. But to the debilitated and the feeble, worn out by old age, it restores the decaying powers, and as it were, fills up the chasm of wasted life. It replenishes and preserves the powers of the muscles, sharpens the obtunded senses, stirs up the languid and almost stagnant circulation of the blood, quickens the pulses (in old persons slow) and promotes the due motion and distribution of the fluids throughout the whole system. It restores also all the secretions and excretions, now diminished and almost suppressed, more especially the perspiration. In this manner, therefore, it would be greatly beneficial to old persons.

Nor does it exert less power in preventing or curing that hardness of the skin and all the solid parts, which brings such evils upon the aged. Cold constricts and hardens the skin and solid parts; but moderate heat relaxes and softens them, as we plainly see. If an old person therefore would go abroad into moderately warm countries, the mild air would sensibly render his hard, rough, dry, and almost impervious skin, smooth and penetrable; again, it would open the numberless more minute vessels now contracted, and almost closed, and open the way for the blood and other humours to many parts of the body, almost dried up for the want of the vital fluid. Hence all the natural secretions and excretions now deficient, are promoted, and the power, contractility and softness are restored to the indurated and tendinous muscles, now trembling, weak, and almost paralytick. Nor is there any doubt but that the nervous system derives the happiest effects, from this renovation of all the powers of the body. It is known that to most persons, a free distribution of the fluids and perspiration, ensures the greatest strength and activity of mind and body. Nor would it happen otherwise in old persons. In consequence of the nervous system being in this way regenerated, the whole

system would be reanimated. Hence as before, the hardness of the solid parts, and especially of the skin and arteries, is in some way or other overcome, the powers of the system are increased, the return of blood to the heart is accelerated in consequence of the diminished resistance, the pulses beat quicker, and the blood is properly propelled through the minute and extreme vessels; so that it opens for itself a passage through the almost closed up vessels, and renders the hard, stiff and dry parts, soft, flexible, and energetic as before.

Now if this may be effected by the perspiration and distribution to the surface being greatly promoted, it appears reasonable how a change of climate might be of service to the aged. For free perspiration, however excited, relaxes and moistens the skin; hence its hardness and dryness in old age is diminished or corrected, and the distribution of blood is rendered more easy to the external parts. It increases the powers of nature therefore, and replenishes deficiencies. It is also very favourable to the nervous system, and produces energy of body and cheerfulness of mind. It perfectly answers the three indications for cure which we have advanced, and these

also reciprocally promote each other. From all these circumstances then, it may be collected, *a priori*, that a change of climate would be of infinite service to the aged.

This theory is confirmed, from analogy of many things which are beneficial to old persons, and which may clearly be referred to our indications. We recommend in the first place to nourish and support the nervous energy: now the liberal use of wine tends to produce this effect; and experience satisfactorily proves, that wine, however injurious it may be to young persons, is, when moderately used, not only safe for the aged, but of the greatest utility; so that it has been esteemed, and not unjustly, the milk of old age. To confirm this it is hardly necessary to adduce the authority of great names. If however there were occasion for such adventitious assistance, the most renowned Sangrado (of whose fame there is no one that has not heard), affords remarkable proof. For after waging, through the course of a whole life, a fierce and implacable war against all generous drink, upon the advance of years, he was vanquished in the fight, and, forced by dire necessity, he implor'd favour and protection from his

former execrated enemy. If any one is disposed to reject the instance of Sangrado, let him yield to the wise Le Sage, who was not less deeply versed in the medical art than in a knowledge of mankind. To the other indication, of promoting the perspiration and distribution of the fluids to the external parts, warm clothing is evidently necessary. And it is well known to every person, that this is extremely useful to old people, who should use flannel shirts. Frictions also, and moderate exercise, especially gestation, which tends to the same effect, is greatly serviceable to old people: so also is the tepid or warm bath, from which many aged persons derive great help.

But the benefits which the summer season brings to old people, strengthen the theory more than any thing else, and are the best proof of the utility to be expected from a warm climate. Upon the approach of summer all the evils which harass the aged in the winter, disappear almost entirely, and old age being kept a little in check, the scintillating and almost extinguished flame of life, is seen to be animated in them anew. Upon the return of winter, the former evils again, and now more grievously, press upon them. If any benefit therefore is derived from our

summer, a climate enjoying a perpetual summer, promises much more permanent assistance.

Finally, experience proves that this hope of relieving old age in some degree, and extending life beyond its natural termination, is neither vain nor futile. For there are many instances of old persons having gone into warmer countries, and having derived new vigour from the change, and prolonged their ebbing life. Some Europeans who have gone to India, experienced unexpectedly this beneficial relief. It is said that the Spaniards and Portuguese, when they feel the presages of old age, not unfrequently go to Brazil or other parts of South America, and thus revive their wasted strength, and sometimes protract life for twenty years or more. "The fame of the healthiness of Brazil (says Piso in his natural and medical history of Brazil) invited formerly not a few old persons and others in ill health, to take advantage of the air and water of the country, as though they were two of the most powerful preservatives of life and health. For the inhabitants soon arrive at maturity: grow old slowly, and without hoariness or baldness. Hence it is that long after the hundredth year of age, they enjoy, not only



the American, but even Europeans themselves, a green old age, so that the whole country deserves to be called the country of longevity." Nay it is said that lost fecundity is restored in the warm islands of America. Which if it be true, plainly proves how powerfully warm air acts in reviving the powers of the system.

A question yet remains to be considered: at what age travelling into warm countries may be undertaken with the greatest benefit. I doubt whether any age can be particularly designated; for the use of travelling depends on the state of the constitution and not on particular periods of life; besides, some grow old sooner and others later. Authors divide old age into incipient or green, and decrepit. They calculate the first from the forty-ninth year, or from the time when men begin to grow gray, and use spectacles, that is to say, from the grand climacterick of life; the other is computed from the end of this to the last hour of existence. In the first, but few and slight inconveniences are experienced; yet, they may be easily observed, and plainly indicate universal and approaching decay. But all the faculties both of the mind and body, as yet remain.

Muscular motion is but little diminished; the faculty of generating, and the appetite for food and digestion, continue: while in decrepit old age all these quickly run on to deterioration. All the powers of the mind are daily diminished, and at length altogether disappear; all the functions of the body languish, and at length cease to operate. It is however observed, that these changes happen sometimes sooner and sometimes later; some retain all their powers and functions, even the faculty of generating, almost to the hundredth year; some preserve the form of the body and all the senses both external and internal, unimpaired till the seventieth or eightieth year. Many persons most manifestly suffer a deterioration of all their powers, before the seventieth year. Before the fiftieth year however, scarcely any sensible alteration takes place. I can hardly believe then, that a change of climate is required before the fiftieth year; but after it, there is no doubt that in many cases it would be of the greatest service. It is much easier in this, if I be not mistaken, as in other instances, to prevent the evils than to cure them; and therefore travelling may be begun with the greatest advantage between the fiftieth and sixty-fifth years of age, for the most

part perhaps about the sixtieth, and sooner or later according to the strength and constitution of the person. But this depends on different circumstances, as a congenital and perhaps hereditary constitution; for longevity is much more frequent in some families than in others; yet it principally depends upon the mode of life, and innumerable other adventitious causes.—Yet I do not in the least doubt that travelling into warm countries, would be extremely beneficial to old persons already become decrepit, and it is perhaps, the only remedy by which their powers may be restored, and their lives prolonged.

Lastly, it is to be inquired how this curative intention derived from climate, is to be answered, and what particular countries should be sought by the aged. A country warmer than our native clime, enjoying a pure, mild and benign air, and in other respects healthy, should always be chosen: again, upon the approach of old age, a still warmer country should be sought: nor do I think that an old person should despair altogether till even the hottest climates have been tried. If any one of our inhabitants who is growing old, should go to Spain or Italy and reside there, I have no doubt but that he would expe-

rience the most beneficial effects from the change, and would banish old age, or at least all the evils of old age, for many years. But in process of time, these would doubtless assail him again; when, if he should seek a still hotter climate, he would by the same reason, receive new vigour from it; so that when old in Spain he might, by being transported into South America, derive assistance from that change, and be again renovated.

Thus we may indulge the pleasing expectation, that health may be procured even in the hottest climes on earth; that man, when threatened with the decrepitudes of old age, may avert, or at least alleviate them, by deserting his native soil; and that he might prolong a life, the shortness of which is a source of perpetual and querulous regret, for twenty or perhaps for thirty years, by availing himself of the friendly influence of a foreign and more genial sun.

THE END.







Med. Hist.

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